Service
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Service Manual

Horizontal Frequency
30 - 83kHz

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFOMER FOR THIS UNIT WHEN SERVICING

Revision List

Version	Release Date	Revision History	TPV Model Name
A00	Jun.-07-2011	Initial release	TIBARV2QAGA42NE
			TIBARV2QAGA14NE
			TIBARV2QAGA24NE
			TIBARV2QAGA32NE

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all AOC Company Equipment. The service procedures recommended by AOC and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. AOC could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, AOC has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by AOC must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.
Hereafter throughout this manual, AOC Company will be referred to as AOC.

WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from AOC. AOC assumes no liability, express or implied, arising out of any unauthorized modification of design.
Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:
DANGER-Invisible laser radiation when open AVOID DIRECT EXPOSURE TO BEAM.
CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.
Take care during handling the LCD module with backlight unit
-Must mount the module using mounting holes arranged in four corners.
-Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
-Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
-Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
-Make certain that treatment person’s body is grounded through wristband.
-Do not leave the module in high temperature and in areas of high humidity for a long time.
-Avoid contact with water as it may a short circuit within the module.
-If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1.Monitor Specifications

Panel	Model name	e2250Sw
	Driving system	TFT Color LCD
	Viewable Image Size	54.7mm diagonal
	Pixel pitch	0.2482mm(H) x 0.2482mm(V)
	Video	R, G, B Analog Interface
	Separate Sync.	H/V TTL
	Display Color	16.7M Colors
	Dot Clock	148.5 MHz
Resolution	Horizontal scan range	30 kHz - 83 kHz
	Horizontal scan Size(Maximum)	476.64mm
	Vertical scan range	50 Hz – 76 Hz
	Vertical scan Size(Maximum)	268.11mm
	Optimal preset resolution	1920 x 1080 (60 Hz)
	Plug & Play	VESA DDC2B
	Input Connector	D-Sub 15pin
	Input Video Signal	Analog: 0.7Vp-p(standard), 75 OHM, Positive
	Power Source	100-240V~, 50/60Hz
	Power Consumption	Active < 31.5 W
		Standby < 0.5 W
	Off timer	0-24 hrs
Physical Characteristics	Connector Type	15-pin Mini D-Sub
	Signal Cable Type	Detachable
	Dimensions & Weight:	
	Height (with base)	379.95 mm
	Width	511.18 mm
	Depth	190.00 mm
	Weight (monitor only)	3.28 kg
	Weight (with packaging)	3.95 kg
Environmental	Temperature:	
	Operating	0° to 40°
	Non-Operating	-25°to 55°
	Humidity:	
	Operating	10% to 85% (non-condensing)

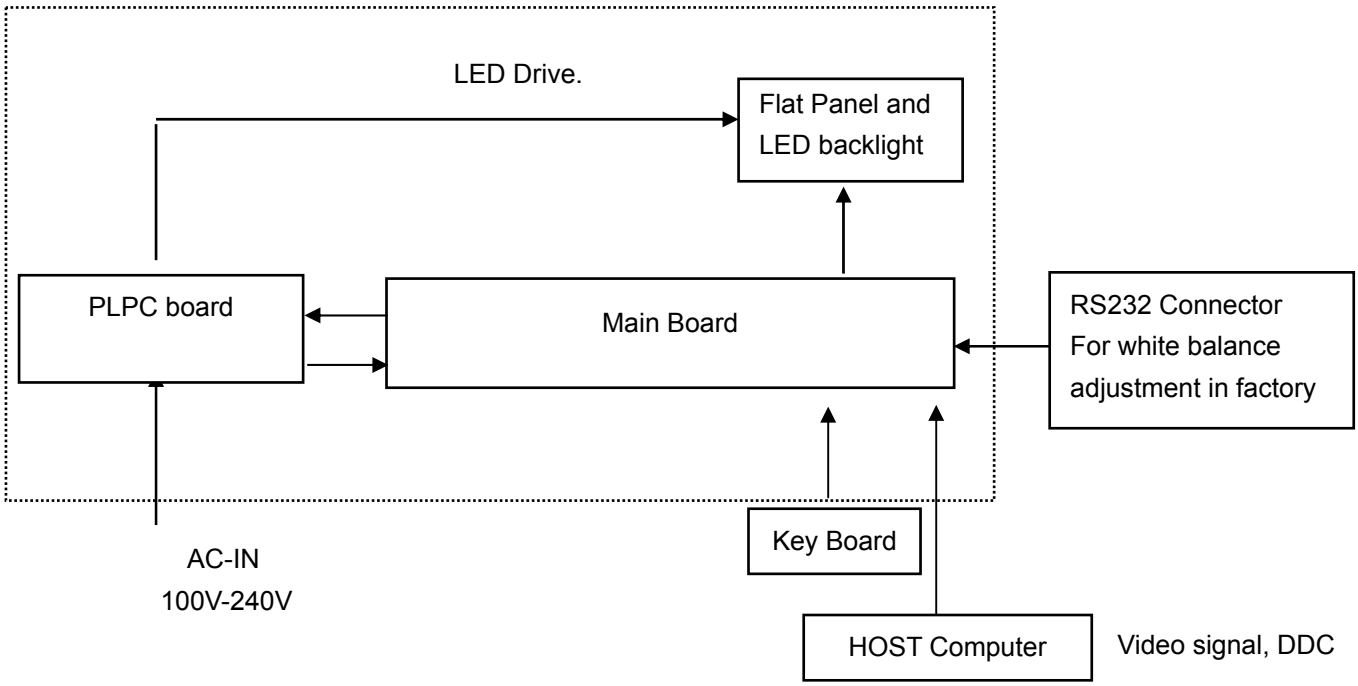
	Non-Operating	5% to 93% (non-condensing)
	Altitude:	
	Operating	0~ 3658m (0~ 12000 ft)
	Non-Operating	0~ 12192m (0~ 40000 ft)

2.LCD Monitor Description

The LCD monitor will contain a main board, a Power board and a key board which house the flat panel control logic, brightness control logic and DDC.

The power part will provide AC to DC Inverter voltage to drive the backlight of panel and the main board chips each voltage.

Monitor Block Diagram



3. Operating Instructions

3.1 General Instructions

Press the power button to turn the monitor on or off. The other control knobs are located at front panel of the monitor (See Figure). By changing these settings, the picture can be adjusted to your personal preferences.

* The power cord should be connected.

* Press the power button to turn on the monitor. The power indicator will light up.

3.2 Control Buttons and Connections

Power

Press the Power button to turn on/off the monitor.

Eco (DCR)/ -

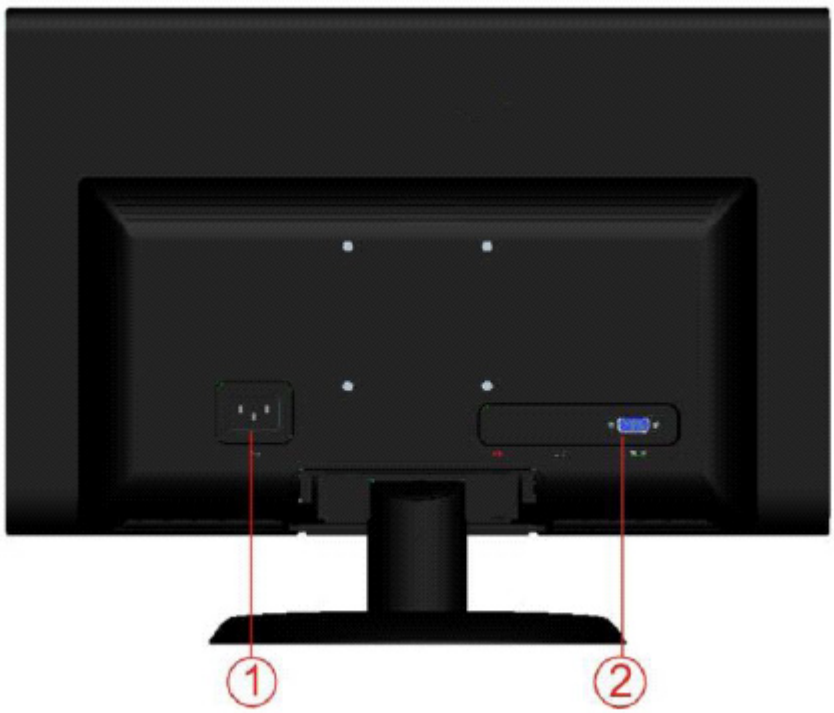
Press the Eco key continuously to select the Eco mode of brightness and DCR on when there is no OSD. (Eco mode hot key may not be available in all models).

4:3 or Wide/+

When there is no OSD, press + continuously to change 4:3 or wide image ratio. (If the product screen size is 4:3 or input signal resolution is wide format, the hot key is disable to adjust.)

Auto / Exit

When the OSD is closed,. Press Auto button continuously to do auto configure (Only for the models with dual or more inputs).



1. Power

2. Analog (DB-15 VGA cable)

To protect equipment, always turn off the PC and LCD monitor before connecting.

1 Connect the power cable to the AC port on the back of the monitor.

2 Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.

If your monitor displays an image, installation is complete. If it does not display an image, please refer Troubleshooting.

3.3 OSD Setting

Basic and simple instruction on the control keys.

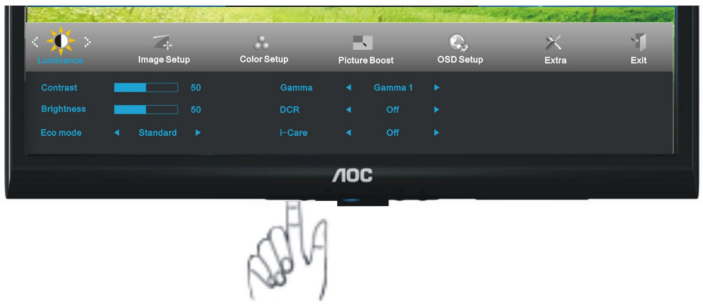
1) Press the MENU-button to activate the OSD window.
2) Press - or + to navigate through the functions. Once the desired function is highlighted, press the MENU-button to activate it . press - or + to navigate through the sub-menu functions. Once the desired function is highlighted, press MENU-button to activate it.
3) Press - or + to change the settings of the selected function. Press AUTO to exit. If you want to adjust any other function, repeat steps 2-3.
4) OSD Lock Function: To lock the OSD, press and hold the MENU button while the monitor is off and then press power button to turn the monitor on. To un-lock the OSD - press and hold the MENU button while the monitor is off and then press power button to turn the monitor on.
Notes:
1) If the product has only one signal input, the item of "Input Select" is disable to adjust.
2) If the product screen size is 4:3 or input signal resolution is wide format, the item of "Image Ratio" is disable to adjust.
3) One of DCR, Color Boost, and Picture Boost functions is active, the other two function is turned off accordingly.

Luminance

1

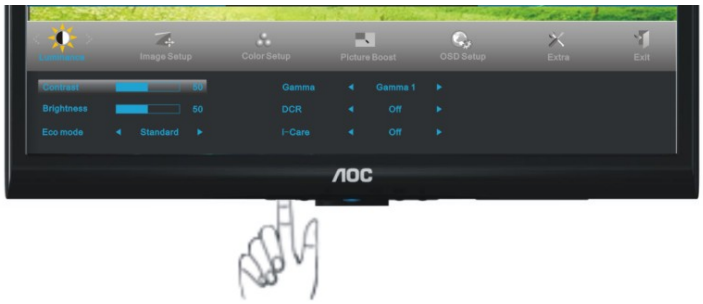
Press **MENU** (Menu) to display menu.

2



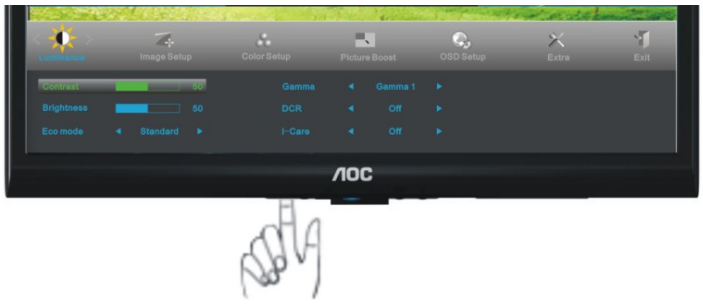
Press − or + to select (Luminance), and press **MENU** to enter.

3



Press − or + to select submenu, and press **MENU** to enter.

4



Press − or + to adjust.

5

Press **AUTO** two times to exit.

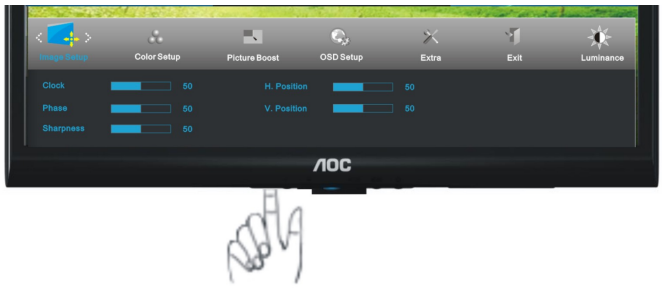
	Brightness	0-100		Backlight Adjustment
	Contrast	0-100		Contrast from Digital-register.
	Eco mode	Standard		Standard Mode
		Text		Text Mode
		Internet		Internet Mode
		Game		Game Mode
		Movie		Movie Mode
		Sports		Sports Mode
	Gamma	Gamma1		Adjust to Gamma1
		Gamma2		Adjust to Gamma 2
		Gamma3		Adjust to Gamma 3
	DCR	Off		Disable dynamic contrast ratio
		On		Enable dynamic contrast ratio

Image Setup

1

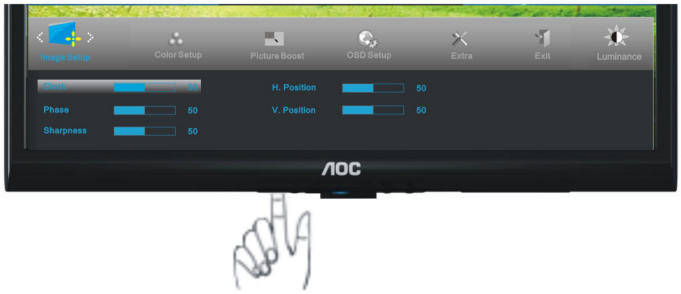
Press **MENU** (Menu) to display menu.

2



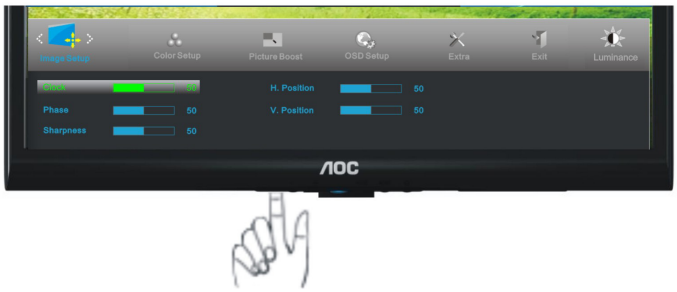
Press − or + to select (Image Setup), and press **MENU** to enter.

3



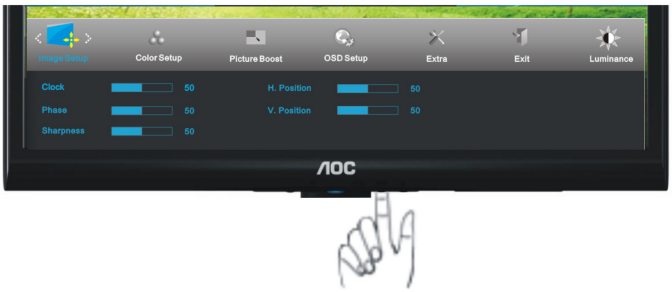
Press − or + to select submenu, and press **MENU** to enter.

4



Press − or + to adjust.

5



Press **AUTO** two times to exit.

	Clock	0-100	Adjust picture Clock to reduce Vertical-Line noise.
	Phase	0-100	Adjust Picture Phase to reduce Horizontal-Line noise
	Sharpness	0-100	Adjust picture sharpness
	H.Position	0-100	Adjust the horizontal position of the picture.
	V.Position	0-100	Adjust the vertical position of the picture.

Color Setup

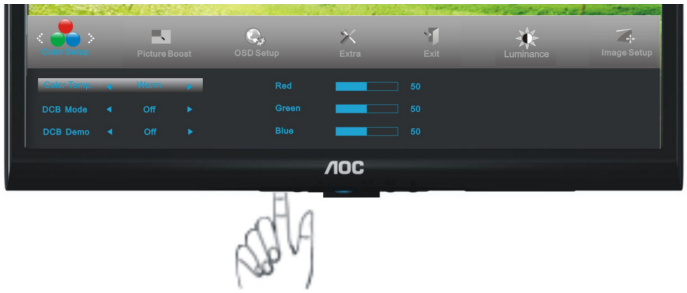
1

Press **MENU** (Menu) to display menu.

2

Press **−** or **+** to select (Color Setup), and press **MENU** to enter.

3

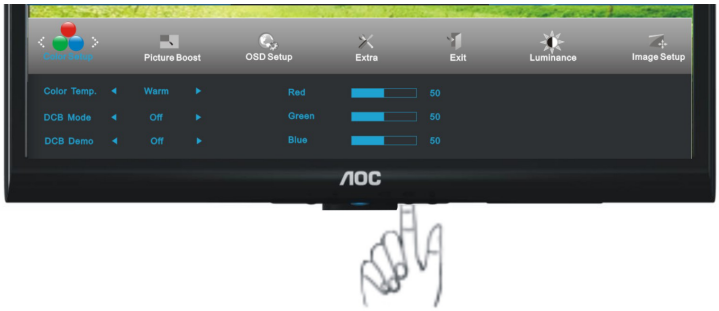


Press **−** or **+** to select submenu, and press **MENU** to enter.

4

Press **−** or **+** to adjust.

5



Press **AUTO** two times to exit.

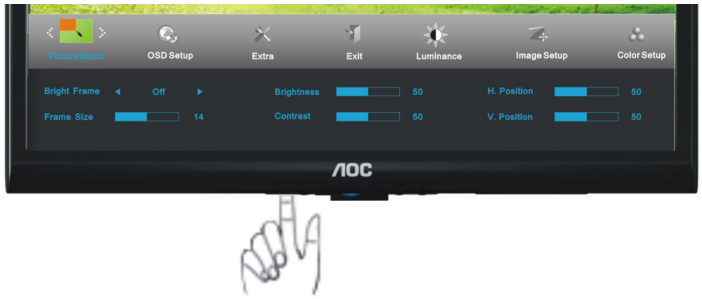
	Color setup.	Warm		Recall Warm Color Temperature from EEPROM.
		Normal		Recall Normal Color Temperature from EEPROM.
		Cool		Recall Cool Color Temperature from EEPROM.
		sRGB		Recall SRGB Color Temperature from EEPROM.
		User	Red	Red Gain from Digital-register
			Green	Green Gain Digital-register.
			Blue	Blue Gain from Digital-register
	DCB Mode	Full Enhance	on or off	Disable or Enable Full Enhance Mode
		Nature Skin	on or off	Disable or Enable Nature Skin Mode
		Green Field	on or off	Disable or Enable Green Field Mode
		Sky-blue	on or off	Disable or Enable Sky-blue Mode
		AutoDetect	on or off	Disable or Enable AutoDetect Mode
	DCB Demo		On or off	Disable or Enable Demo

Picture Boost

1

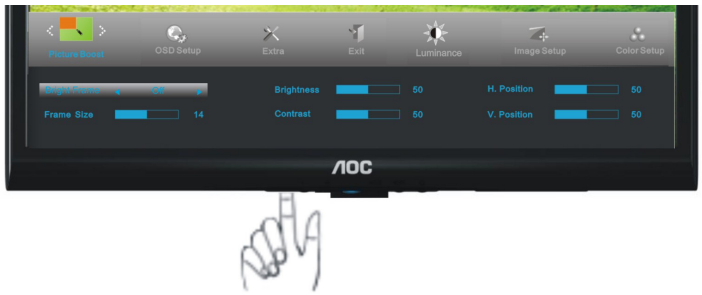
Press **MENU** (Menu) to display menu.

2



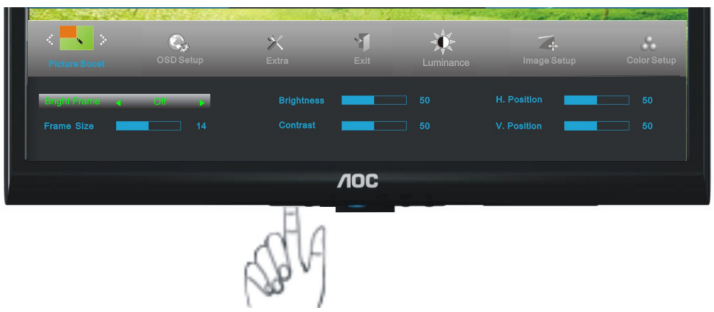
Press − or + to select (Picture Boost), and press **MENU** to enter.

3



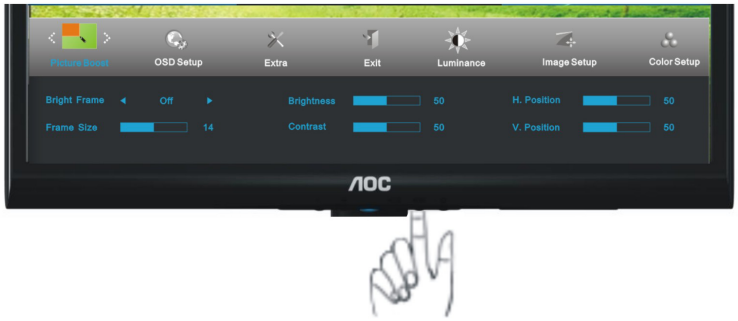
Press − or + to select submenu, and press **MENU** to enter.

4

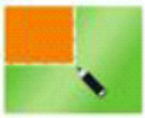


Press − or + to adjust.

5



Press **AUTO** two times to exit.

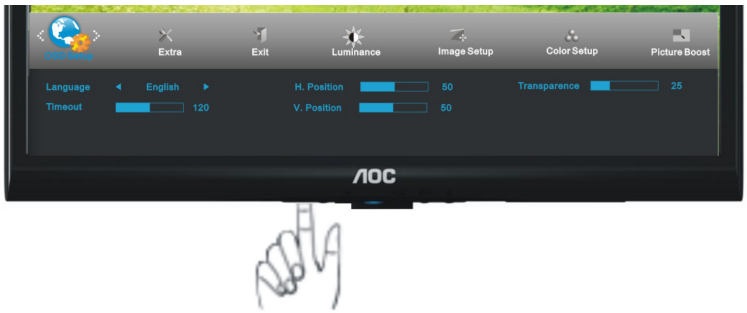
	Frame Size	14-100	Adjust Frame Size
	Brightness	0-100	Adjust Frame Brightness
	Contrast	0-100	Adjust Frame Contrast
	H. position	0-100	Adjust Frame horizontal Position
	V.position	0-100	Adjust Frame vertical Position
	Bright Frame	on or off	Disable or Enable Bright Frame

OSD Setup

1

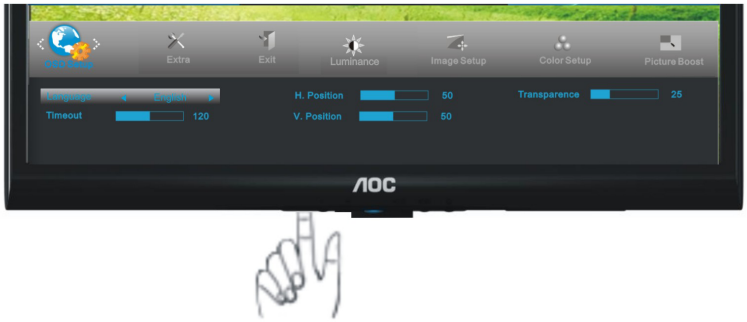
Press **MENU** (Menu) to display menu.

2



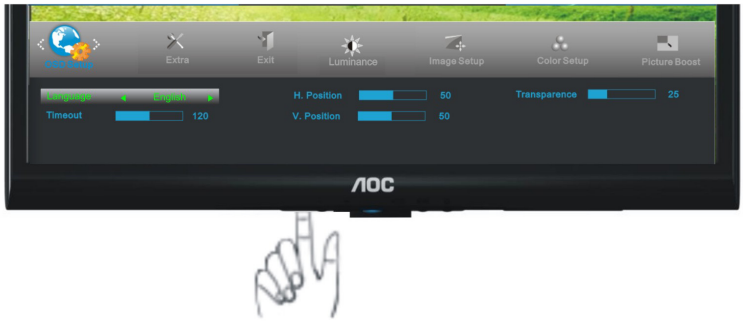
Press − or + to select (OSD Setup), and press **MENU** to enter.

3



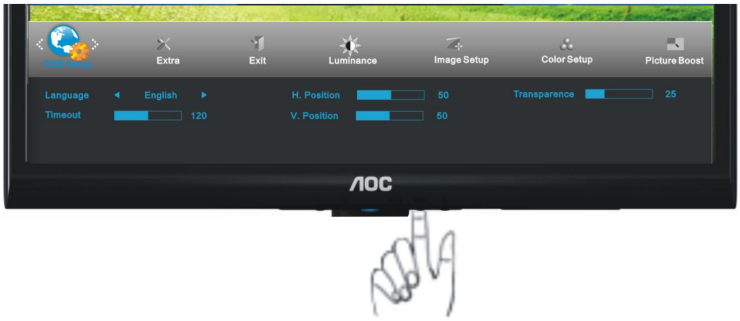
Press − or + to select submenu, and press **MENU** to enter.

4



Press − or + to adjust.

5



Press **AUTO** two times to exit.

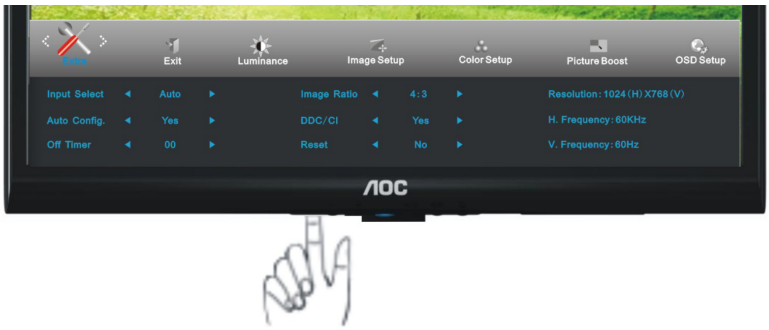
	H.Position	0-100	Adjust the horizontal position of OSD
	V.Position	0-100	Adjust the vertical position of OSD
	Timeout	5-120	Adjust the OSD Timeout
	Transparence	0-100	Adjust the transparence of OSD
	Language		Select the OSD language

Extra

1

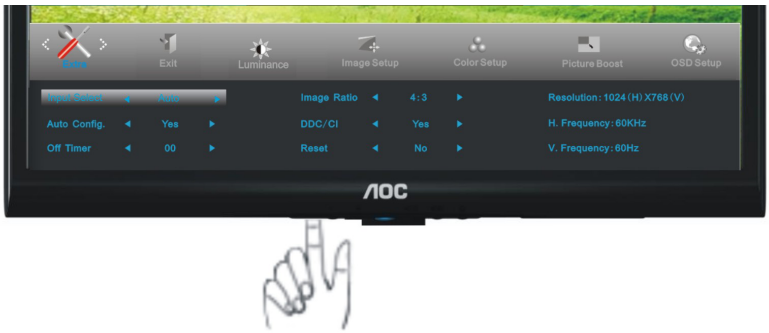
Press **MENU** (Menu) to display menu.

2



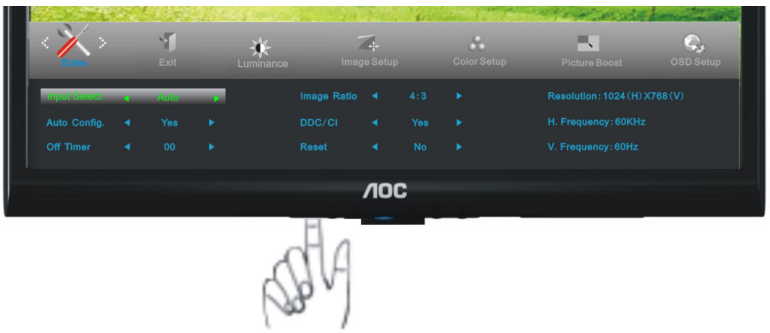
Press **−** or **+** to select (Extra), and press **MENU** to enter.

3



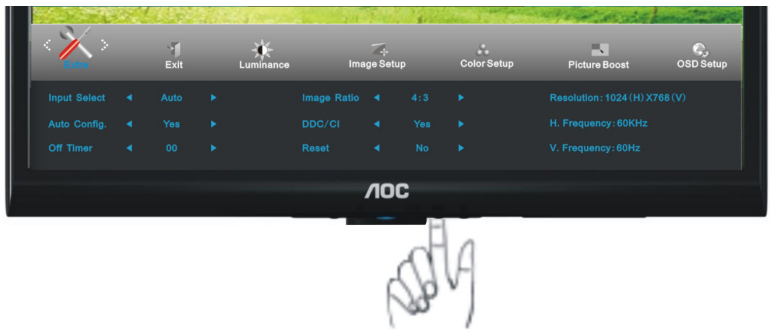
Press **−** or **+** to select submenu, and press **MENU** to enter.

4



Press **−** or **+** to adjust.

5



Press **AUTO** two times to exit.

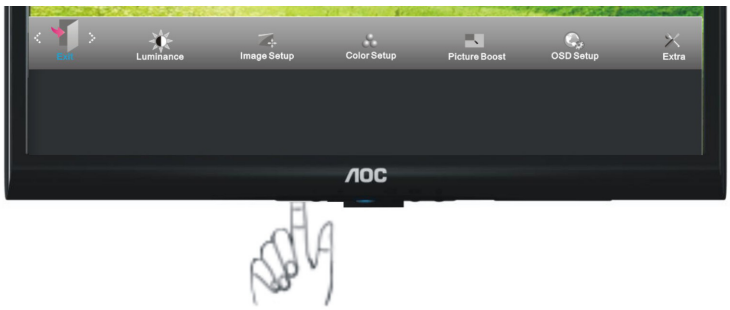
	Input Select	Analog	Select Analog Sigal Source as Input
	Auto Config	yes or no	Auto adjust the picture to default
	Off timer	0-24hrs	Select DC off time
	Image Ratio	wide or 4:3	Select wide or 4:3 format for display
	DDC-CI	yes or no	Turn ON/OFF DDC-CI Support
	Reset	Yes or no	Reset the menu to default
	Information		Show the information of the main image and sub-image source

Exit

1

Press **MENU** (Menu) to display menu.

2



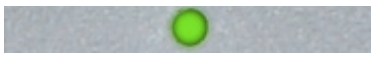
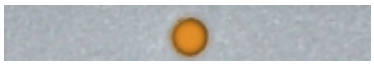
Press **−** or **+** to select (Exit), and press **MENU** to enter.

3

Press **AUTO** two times to exit

	Exit		Exit the main OSD

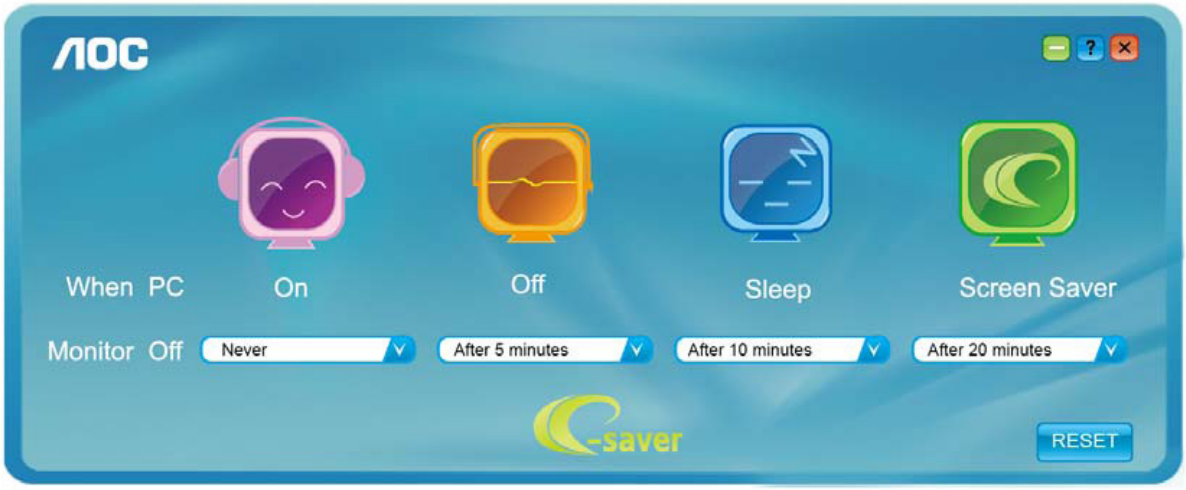
LED Indicators

Status	LED Color	
Full Power Mode	Green or Blue	
Active-off Mode	Orange or red	

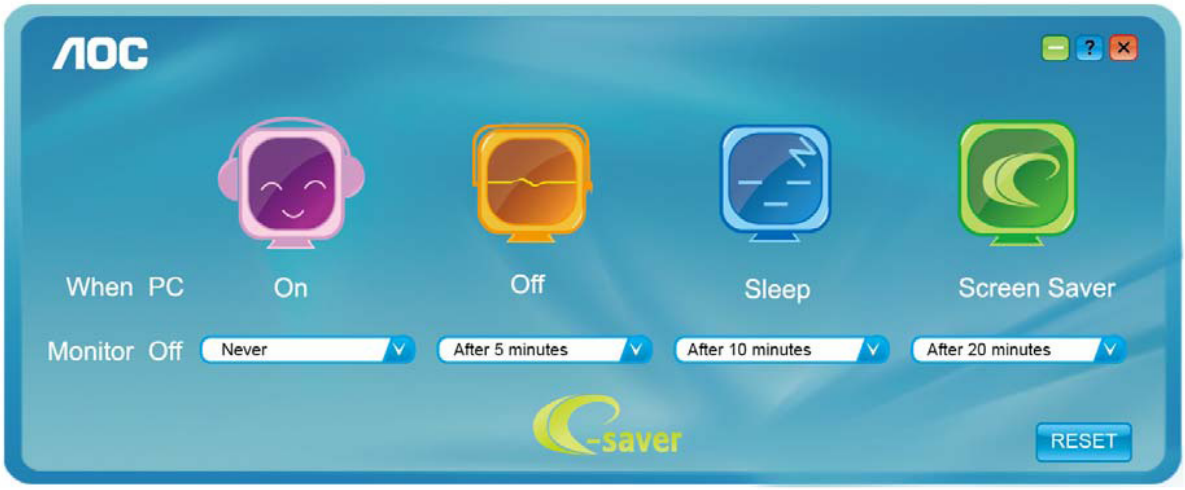
e-Saver

Welcome to use AOC e-Saver monitor power management software! The AOC e-Saver features Smart Shutdown functions for your monitors, allows your monitor to timely shutdown when PC unit is at any status (On, Off, Sleep or Screen Saver); the actual shutdown time depends on your preferences (see example below).
Please click on "driver/e-Saver/setup.exe" to start installing the e-Saver software, follow the install wizard to complete software installation.

Under each of the four PC status, you may choose from the pull-down menu the desired time (in minutes) for your monitor to automatically shutdown. The example above illustrated:
1) The monitor will never shutdown when the PC is powered on.
2) The monitor will automatically shutdown 5 minutes after the PC is powered off.
3) The monitor will automatically shutdown 10 minutes after the PC is in sleep/stand-by mode.
4) The monitor will automatically shutdown 20 minutes after the screen saver appears.



You can click “RESET” to set the e-Saver to its default settings like below.



Question	Answer
e-sensor no power	1. Into the factory mode，set Burn in to **OFF**; 2. Set e-sensor to **ON**.
interface show **e-sensor**	The detecting range is too near or far and the User is far away the monitor, reset the examination area.
it can't your monitor to turn off or dark while you are away	1. Please do not block the e-Sensor on the LOGO, which is located on the left of AOC logo. 2. The detecting range is too far or the things blocks monitor , reset the examination area.

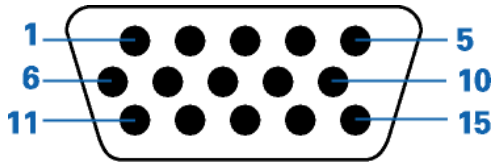
Screen+

Welcome to "Screen+" software by AOC, Screen+ software is a desktop screen splitting tool, it splits the desktop into different panes, each pane displays a different window. You only need to drag the window to a corresponding pane, when you want to access it. It supports multiple monitor display to make your task easier. Please follow the installation software to install it.

4. Input/Output Specification

4.1 Input Signal Connector

Analog connector



Pin Number	15-Pin Side of the Signal Cable
1	Video-Red
2	Video-Green
3	Video-Blue
4	N.C.
5	Detect Cable
6	GND-R
7	GND-G
8	GND-B
9	+5V
10	Ground
11	N.C.
12	DDC-Serial data
13	H-sync
14	V-sync
15	DDC-Serial clock

4.2 Preset Display Modes

STAND	RESOLUTION	HORIZONTAL FREQUENCY(kHZ)	VERTICAL FREQUENCY(Hz)
VGA	640×480@60Hz	31.469	59.940
VGA	640×480@72Hz	37.861	72.809
VGA	640×480@75Hz	37.500	75.000
SVGA	800×600@56Hz	35.156	56.250
SVGA	800×600@60Hz	37.879	60.317
SVGA	800×600@72Hz	48.077	72.188
SVGA	800×600@75Hz	46.875	75.000
XGA	1024×768@60Hz	48.363	60.004
XGA	1024×768@75Hz	60.023	75.029
SXGA	1280×1024@60Hz	63.981	60.020
SXGA	1280×1024@75Hz	79.976	75.025
WXGA	1440×900@60Hz	55.935	55.876
WSXGA+	1680×1050@60Hz	65.290	59.950
FHD	1920×1080@60Hz	67.500	60.000
IBM-MODE DOS	720×400@70Hz	31.469	70.087

4.3 Panel Specification

4.3.1 General Features

The M215HW01 model is a 21.5 inch wide TFT-LCD module with LED Backlight Unit and a 30-pin 2ch-LVDS interface. This module supports 1920 x 1080 Full HD (16:9 wide screen) mode and displays up to 16.7 millions colors. All input signals are 2-channel LVDS interface .

4.3.2 GENERAL SPECIFICATIONS

Item	Specification	Unit
Diagonal size	546.86 (21.53")	mm
Active Area	476.64 x 268.11	mm
Bezel Opening Area	479.8 (H) x 271.3 (V)	mm
Driver Element	a-Si TFT active matrix	-
Pixel Number	1920 x R.G.B. x 1080	pixel
Pixel Pitch	0.248(H) x 0.248(V)	mm
Pixel Arrangement	RGB vertical stripe	-
Display Colors	16.7 millions	color
Transmissive Mode	Normally White	-
Color Gamut	68%	
Surface Treatment	Hard coating (3H), AG (Haze 25%)	-
Module Power Consumption	16.8	Watt

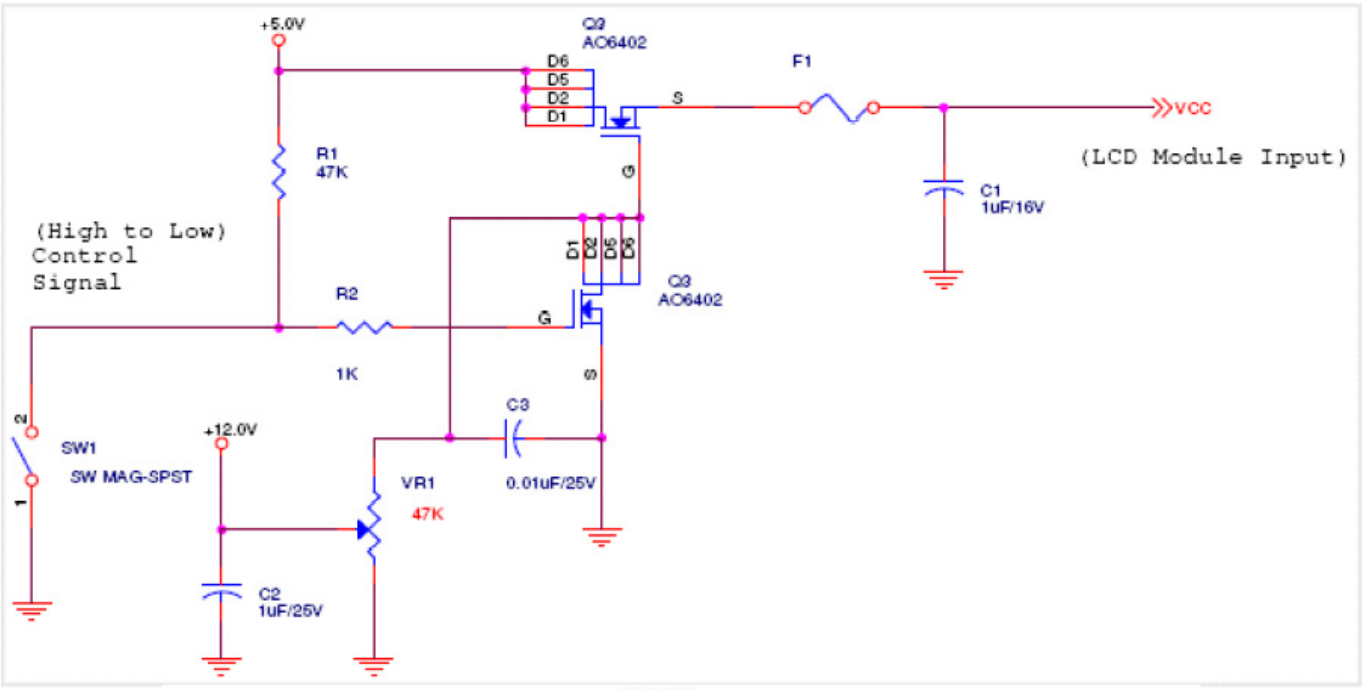
Item		Min.	Typ.	Max.	Unit
Module Size	Horizontal(H)	495.1	495.6	496.1	mm
	Vertical(V)	291.7	292.2	292.7	mm
	Depth(D)	11	11.5	12	mm
Weight		-	1850	2000	g
I/F connector mounting position		The mounting inclination of the connector makes the screen center within ±0.5 mm as the horizontal.			

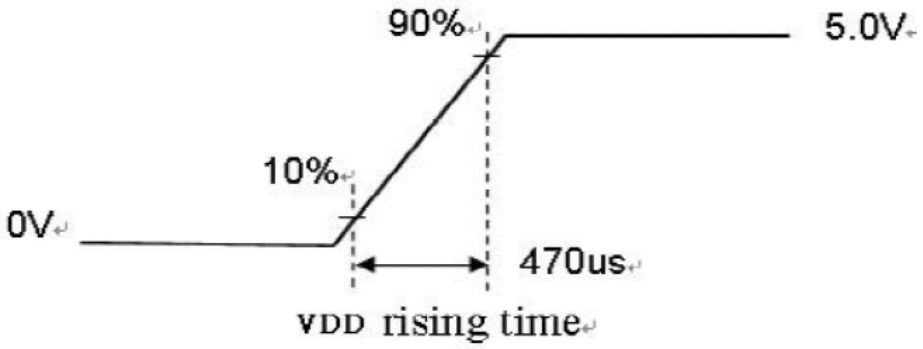
4.3.3 Electrical Characteristics

Electrical characteristics

Symbol	Parameter	Min	Typ	Max	Unit	Conditions
VDD	Logic/LCD Drive Voltage	4.5	5.0	5.5	[Volt]	+/-10%
IDD	Input Current	-	0.98	1.22	[A]	VDD= 5.0V, All Black Pattern At 60Hz
PDD	VDD Power	-	4.9	6.1	[Watt]	VDD= 5.0V, All Black Pattern At 60Hz
IRush	Inrush Current	-	-	3	[A]	**Note 1**
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	-	-	500	[mV] p-p	VDD= 5.0V, All Black Pattern At 75Hz

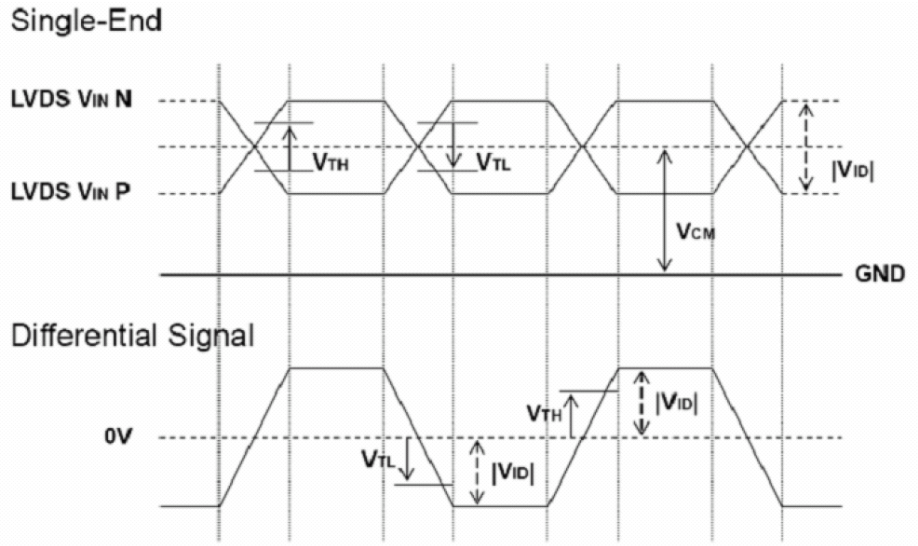
Note 1: Measurement conditions:
The duration of rising time of power input is 470us.





Symbol	Parameter	Min	Typ	Max	Units	Condition
VTH	Differential Input High Threshold	-	+50	+100	[mV]	VICM = 1.2V ***Note 1***
VTL	Differential Input Low Threshold	-100	-	-	[mV]	VICM = 1.2V ***Note 1***
| VID |	Input Differential Voltage	100	-	600	[mV]	***Note 1***
VICM	Differential Input Common Mode Voltage	+1.0	+1.2	+1.5	[V]	VTH-VTL = 200MV (max) ***Note 1***

Note 1: LVDS Signal Waveform



LED array electrical characteristics

Parameter	Symbol	Value			Unit	Note
		Min	Typ.	Max.		
Light Bar Input Voltage	V_{LED}	45	49.5	54	V_{DC}	(Duty 100%)
Light Bar Input Current	I_{LED}	--	60	63	mA_{DC}	(Duty 100%) per string (1)
Power Consumption	P_{LED}	--	11.9	13	W	(2)
LED Life Time	L_{BL}	--	30000	--	Hrs	(3)
IFP LED Peak forward current	I_{LED}	--	--	180	mA_{DC}	(4)

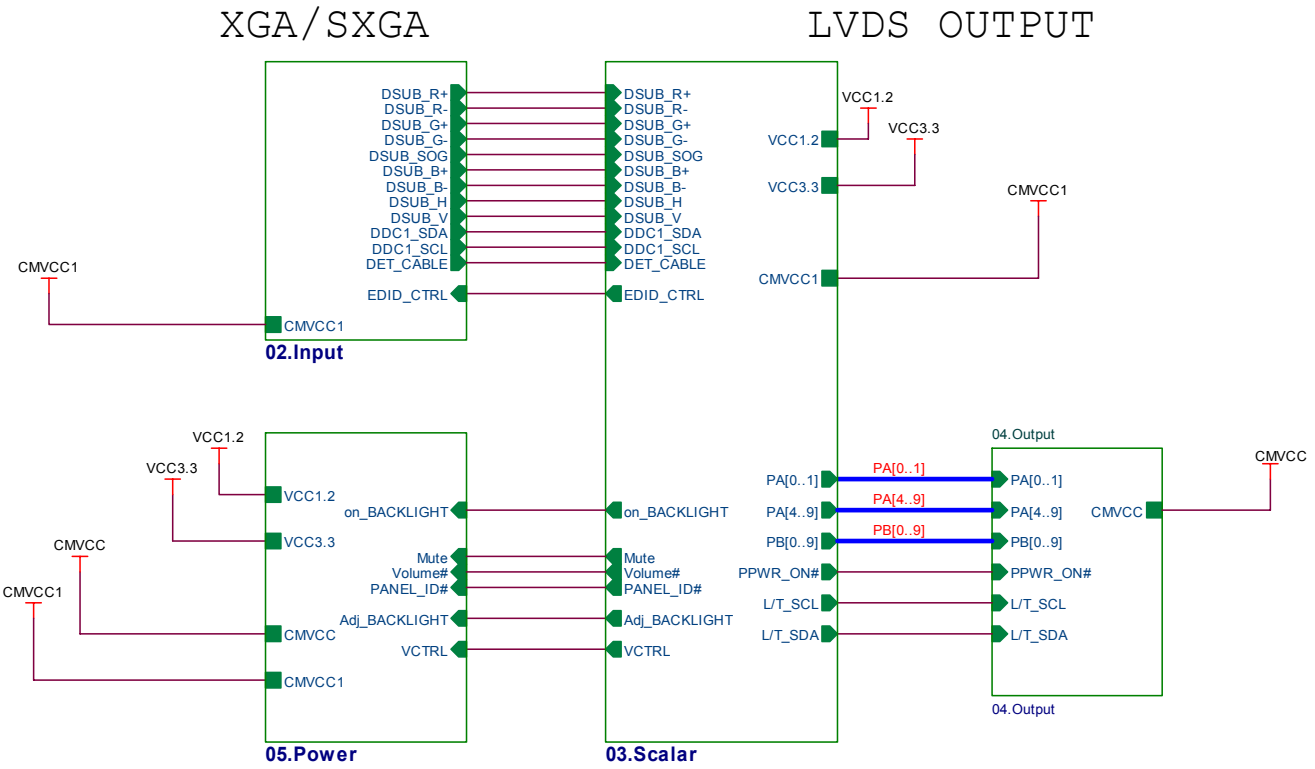
Note (1) The LED can work normally if the PWM dimming ratio range is from 0% to 100% and the operation current is 60mA.
Note (2) PLED = (ILED ×4) × VLED , LED matrix is 15S4P.The lightbar used by backlight unit.
Note (3) The lifetime of LED is defined as the time when it continues to operate under the conditions at Ta = 25 ±2℃ and I =
60 mA(Per EA) until the brightness becomes ≤50% of its original value.
Note(4): Pulse Width ≦10 msec and Duty ≦ 1/10
Note(5)：Voltage &Temperature curve

4.3.4 Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Color Chromaticity	Red	Rx	θ_x=0°, θ_Y =0° CS-1000T	Typ – 0.03	0.635	Typ + 0.03	
		Ry			0.349		
	Green	Gx			0.332		
		Gy			0.619		
	Blue	Bx			0.155		
		By			0.055		
	White	Wx			0.313		
		Wy			0.329		
Center Luminance of White		L_C		200	250	---	cd/m^2
Contrast Ratio		CR		600	1000	---	-
Response Time		T_R	θ_x=0°, θ_Y =0°	---	3.8	5.5	ms
		T_F		---	1.2	2.5	ms
White Variation		δW	θ_x=0°, θ_Y =0°	---	1.25	1.33	-
Viewing Angle	Horizontal	θ_x+	CR ≧ 10	75	85	---	Deg.
		θ_x-		75	85	---	
	Vertical	θ_Y+		70	80	---	
		θ_Y-		70	80	---	

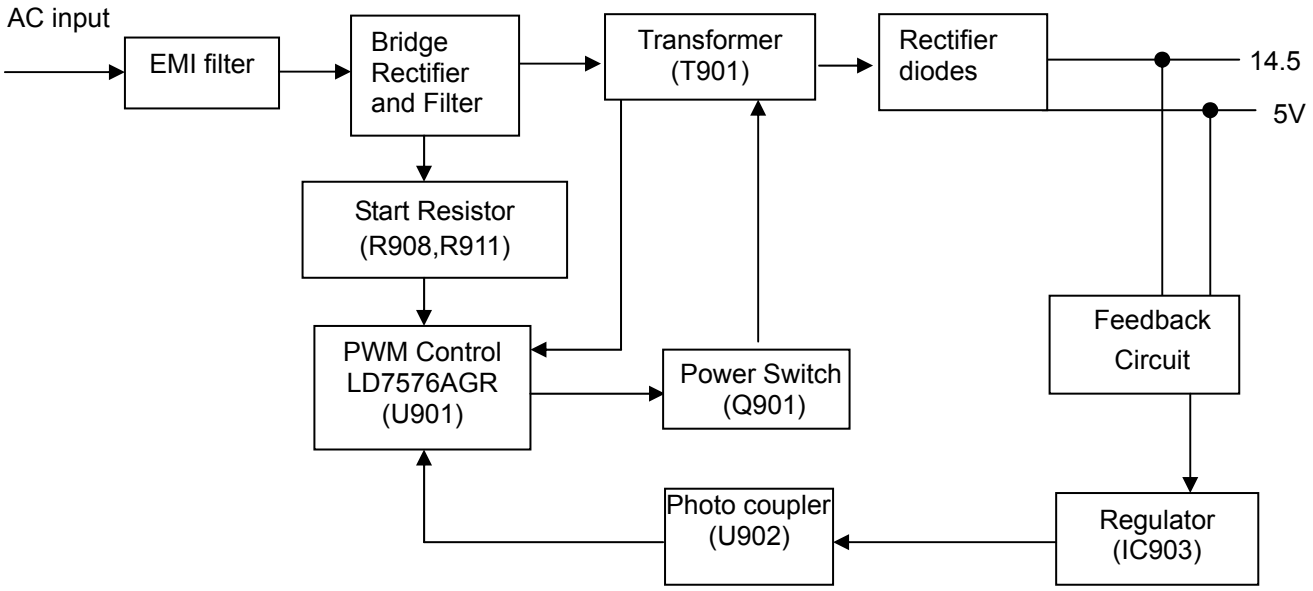
5. Block Diagram

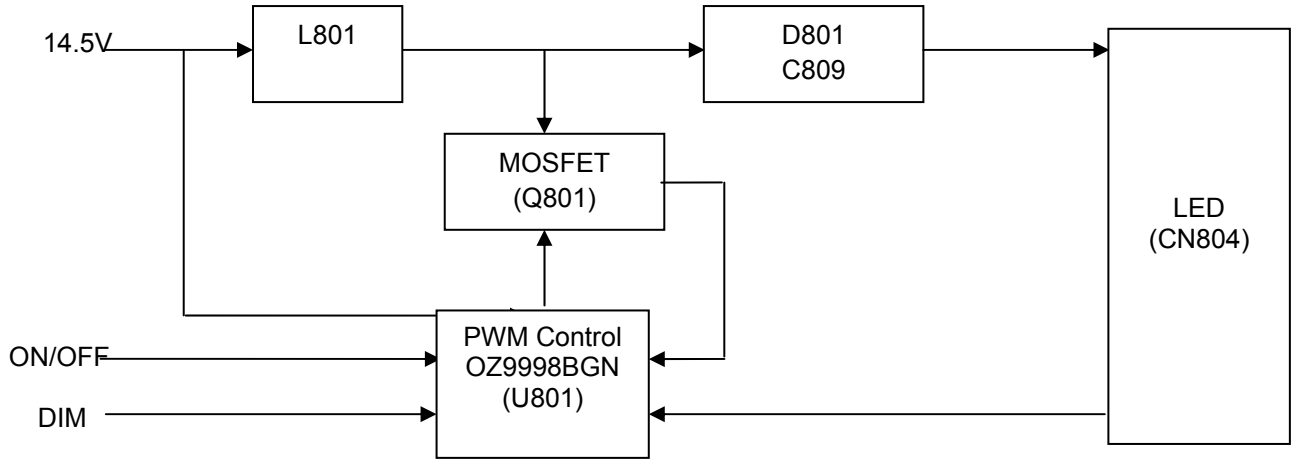
5.1 Main Board



TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	AOC 50 ID(1A)	Size	A
紙隔瓜網腹	715G4737-M0B-000-0040_101028	TPV MODEL	AOC 50 ID(1A)	Rev	A
Key Component	01.Top	PCB NAME	715G4737-M0B	称爹	<称爹>
Date	Friday, November 12, 2010	Sheet	3 of 7		

5.2 Power Board

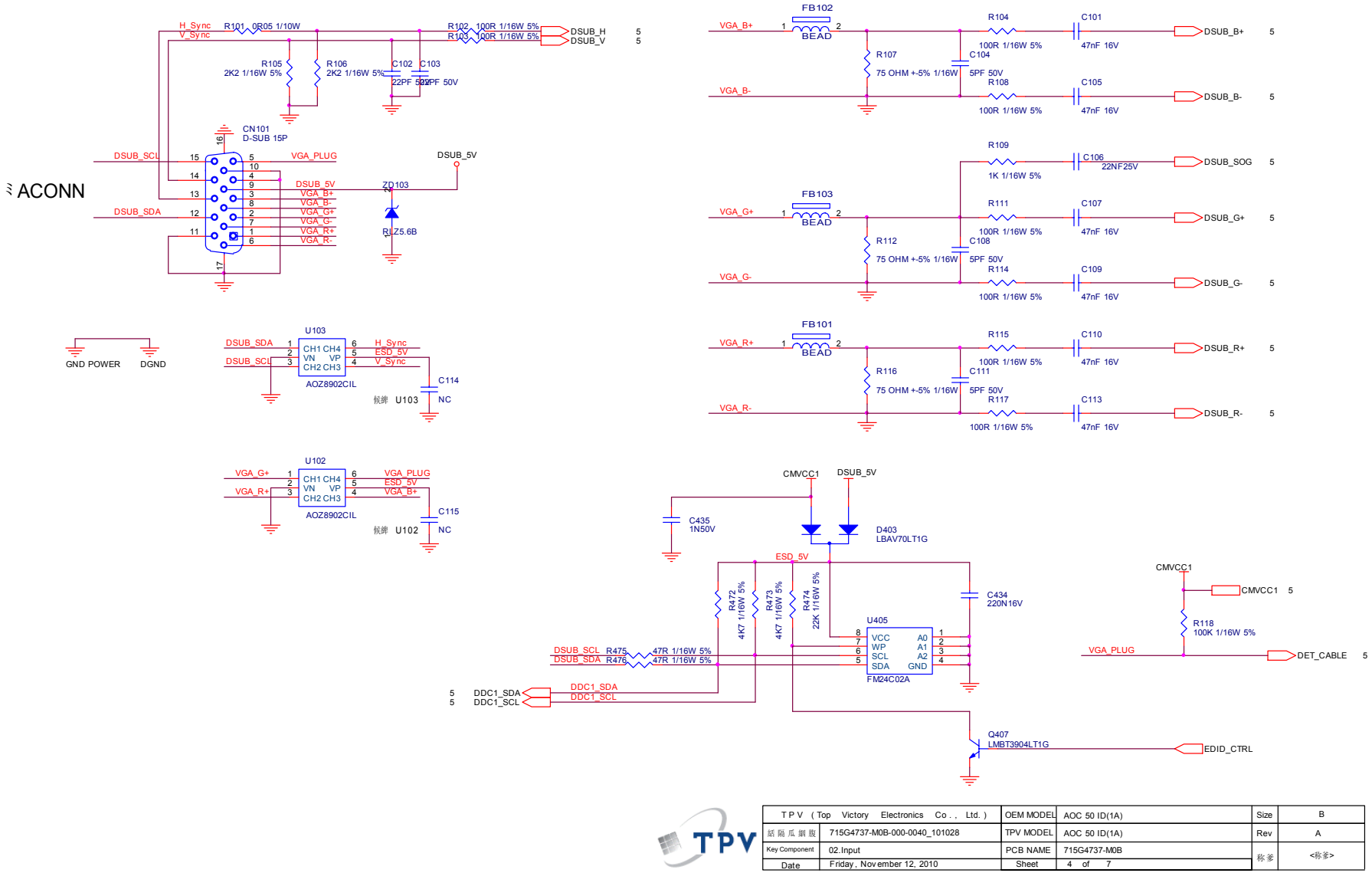




6. Schematic

6.1 Main Board

715G4737M01BRA004C

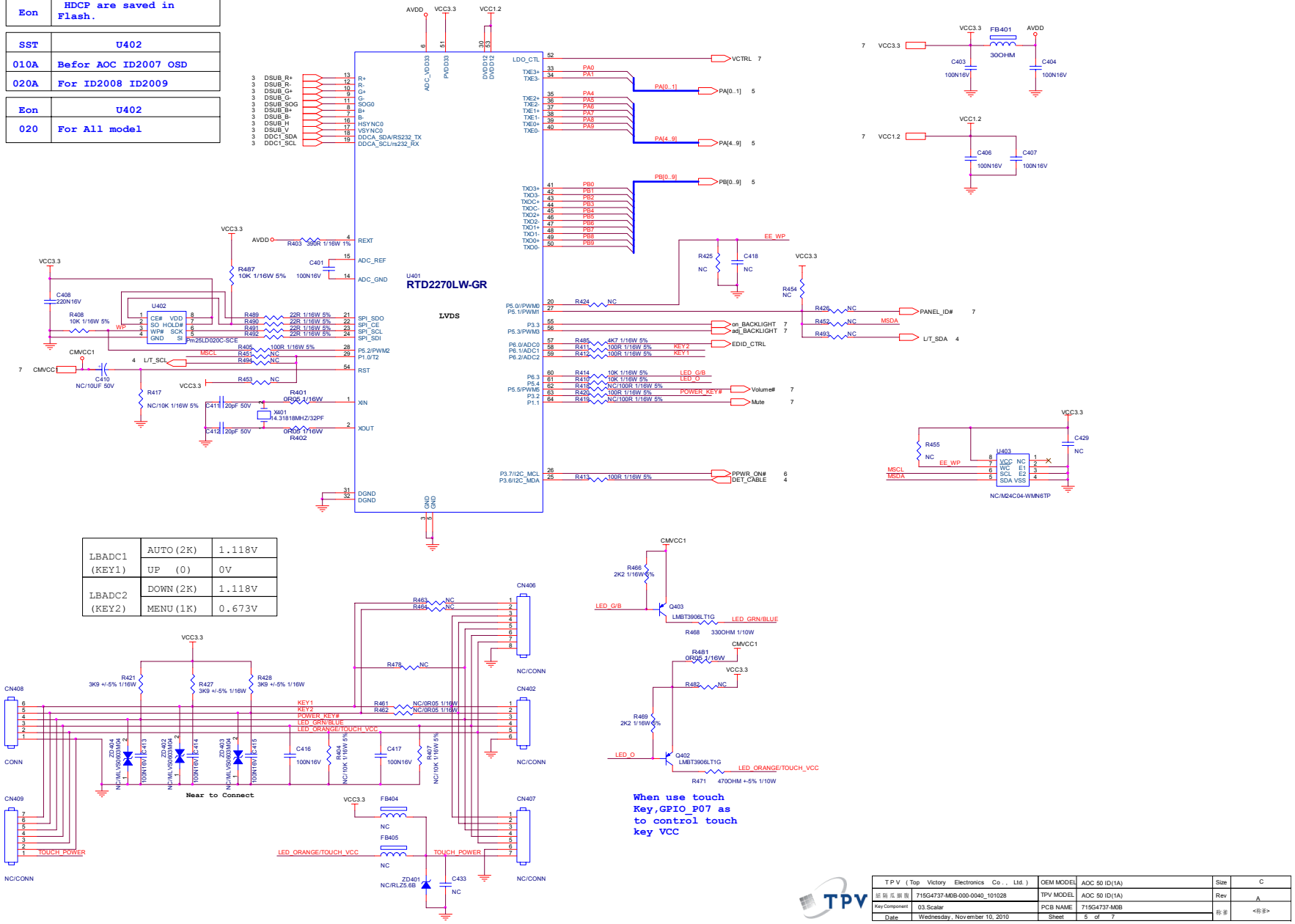


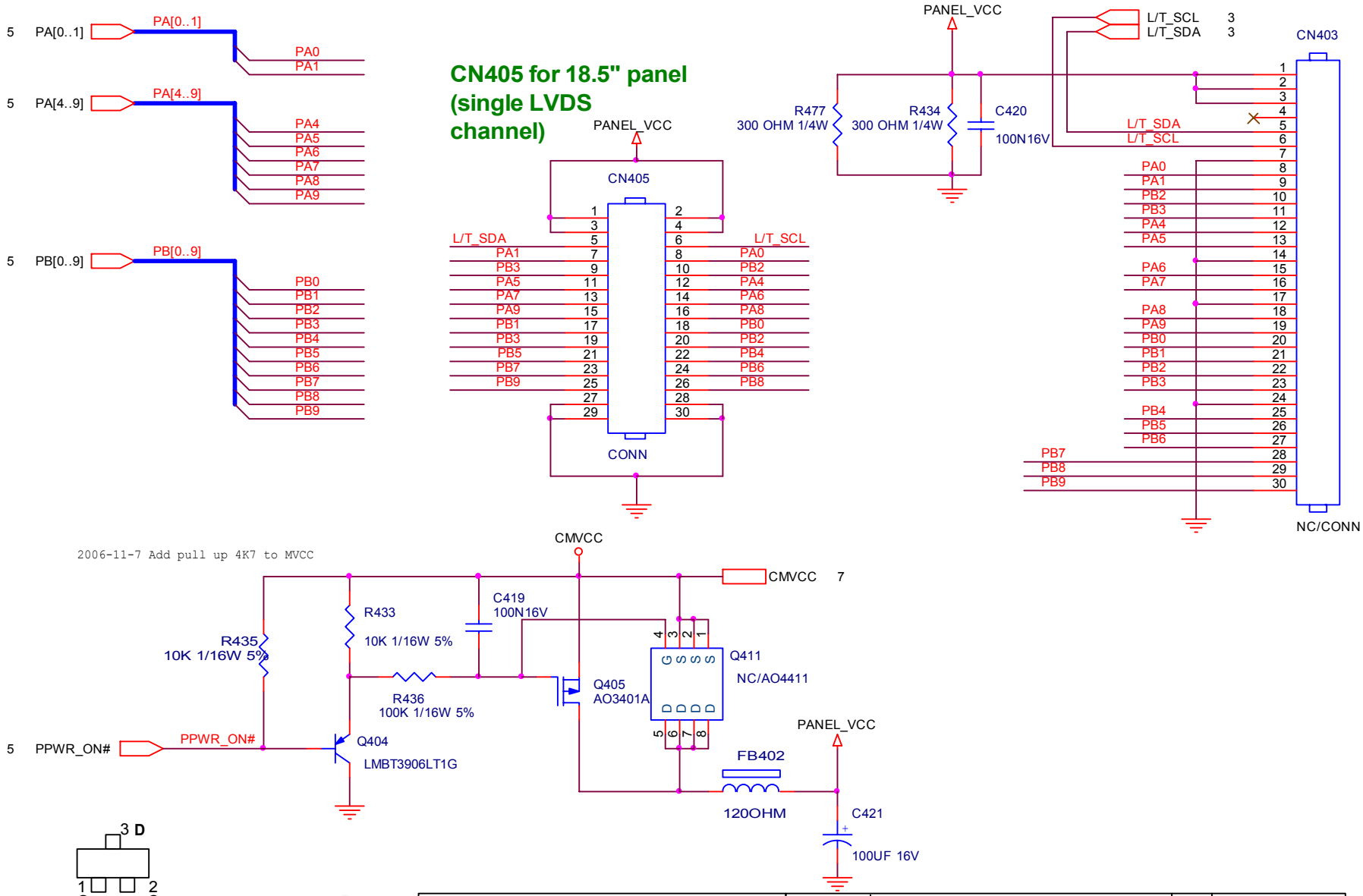
T P V (Top Victory Electronics Co., Ltd.)		OEM MODEL	AOC 50 ID(1A)	Size	B
話 隔 瓜 銅 股	715G4737-M0B-000-0040_101028	TPV MODEL	AOC 50 ID(1A)	Rev	A
Key Component	02.Input	PCB NAME	715G4737-M0B	称 爹	<称爹>
Date	Friday, November 12, 2010	Sheet	4 of 7		

	U402
SST Eon	For user data, WB, EDID, HDCP are saved in Flash.

SST	U402
010A	Befor AOC ID2007 OSD
020A	For ID2008 ID2009

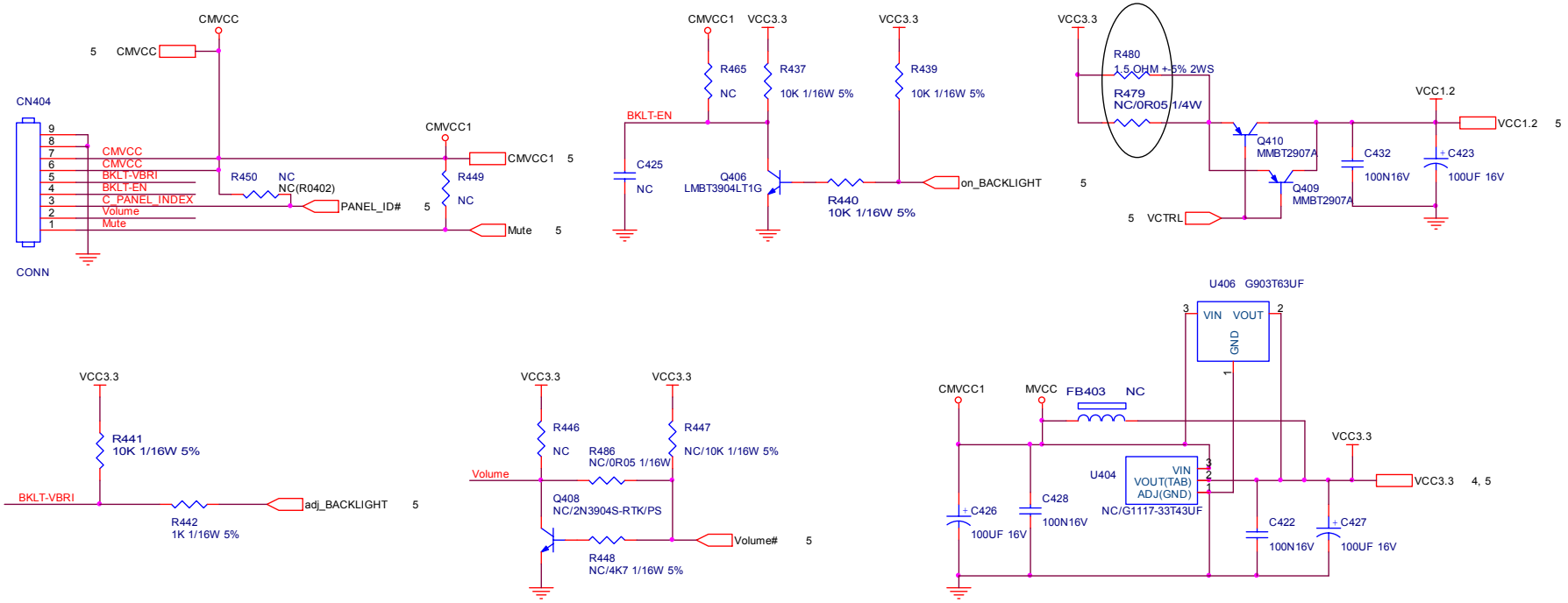
Eon	U402
020	For All model





T P V (Top Victory Electronics Co . , Ltd.)		OEM MODEL	AOC 50 ID(1A)	Size	A
結 隔 瓜 細 腹	715G4737-M0B-000-0040_101028	TPV MODEL	AOC 50 ID(1A)	Rev	A
Key Component	04.Output	PCB NAME	715G4737-M0B	称 爹	<称爹>
Date	Friday, October 29, 2010	Sheet	6 of 7		

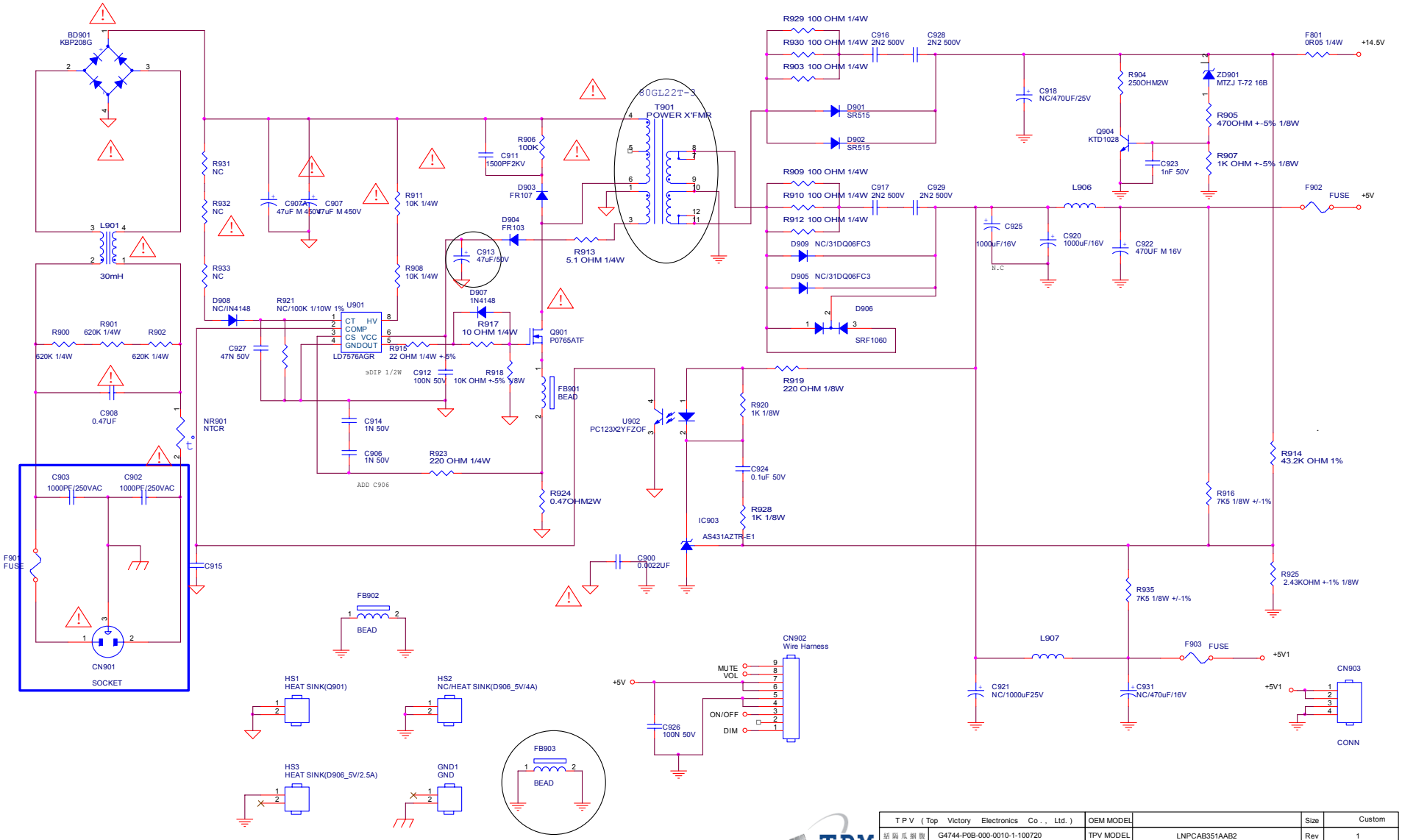
2008/01/14
BAT99 : If 0.05A,VF=1.0V
BAV70 : If 0.05A,VF=1.0V
It's need to use Low Dropout Regulator.



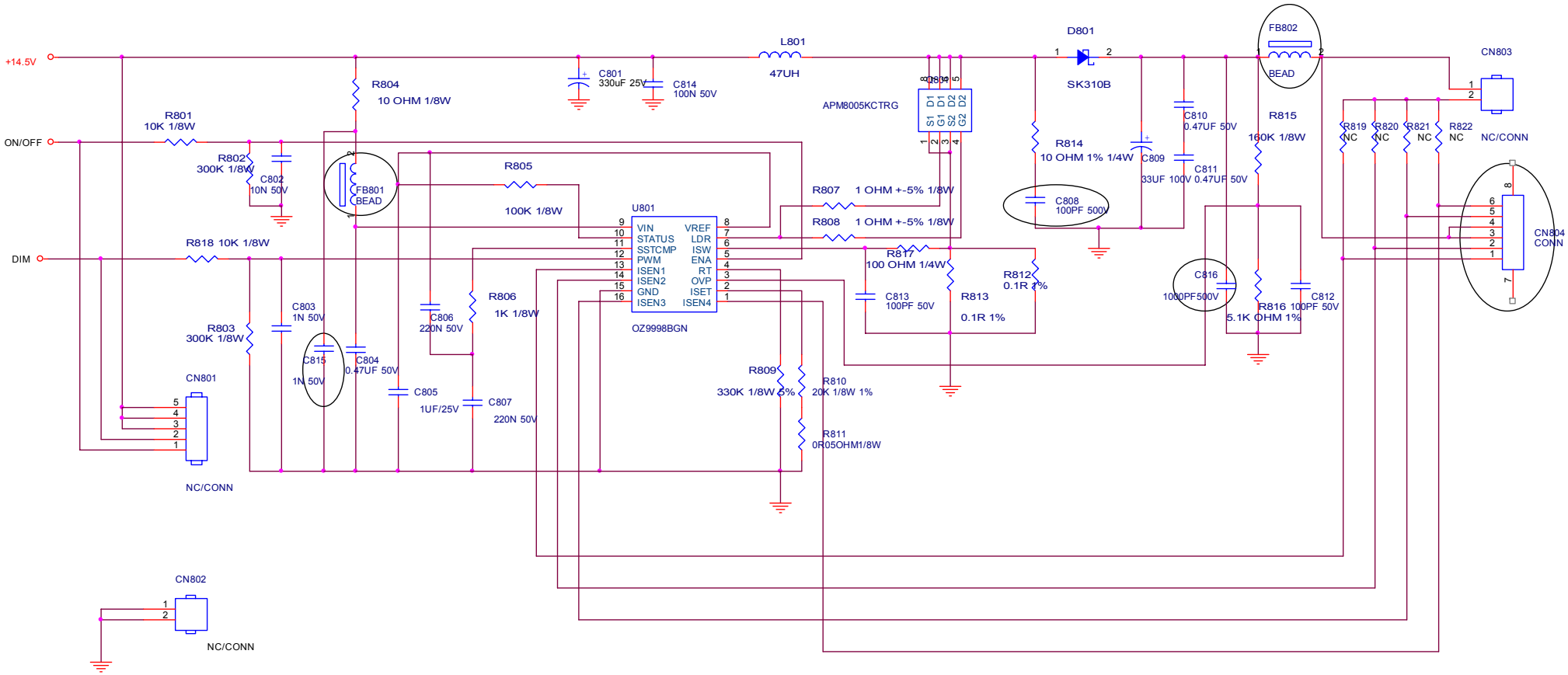
U404 can use package 223 or 252.

TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	AOC 50 ID(1A)	Size	B
話 隔 瓜 網 腹	715G4737-M0B-000-0040_101028	TPV MODEL	AOC 50 ID(1A)	Rev	A
Key Component	05.Power	PCB NAME	715G4737-M0B	称 爹	<称爹>
Date	Tuesday, November 09, 2010	Sheet	7 of 7		

6.2 Power Board
715G4744P01000001C



T P V (Top Victory Electronics Co . , Ltd.)		OEM MODEL		Size	Custom
結 箱 瓜 鋼 腹	G4744-P0B-000-0010-1-100720	TPV MODEL	LNPCAB351AAB2	Rev	1
Key Component	01.POWER	PCB NAME	715G4497-P0B-000-0010	称 峯	ODM MODEL
Date	Tuesday, March 29, 2011	Sheet	1 of 3		

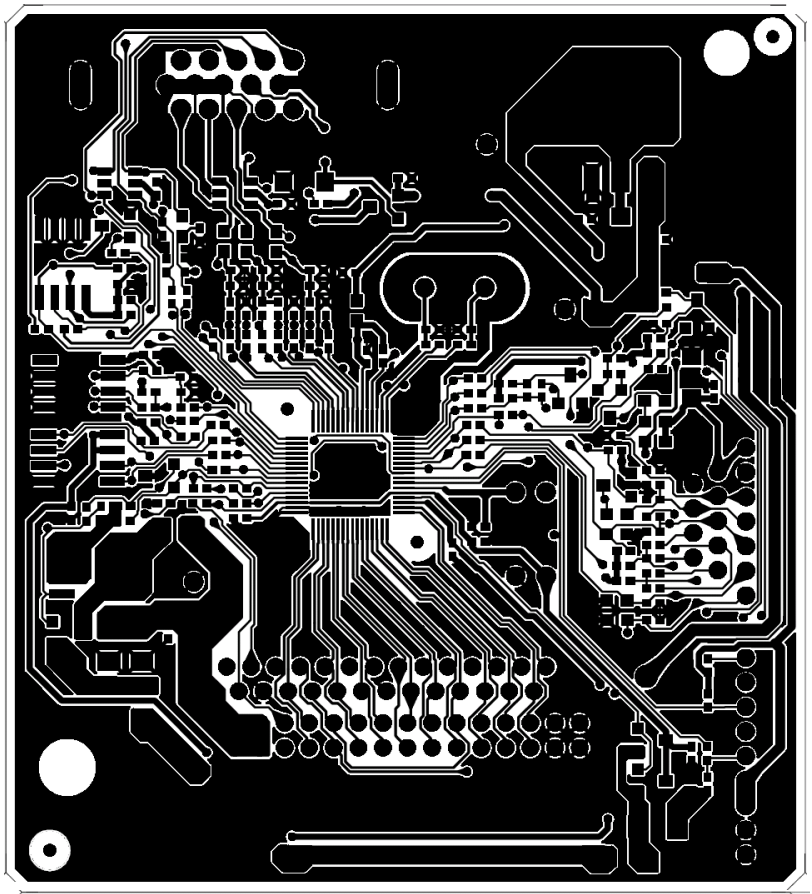


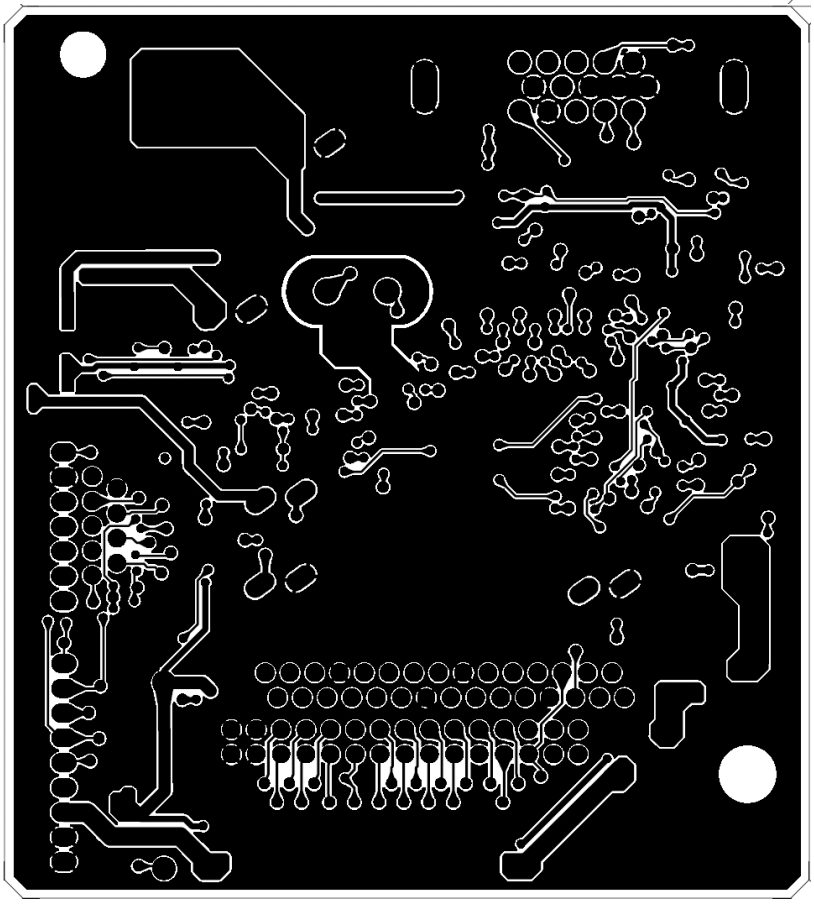
T P V (Top Victory Electronics Co . , Ltd.)		OEM MODEL		Size	Custom
延 陽 瓜 銅 腹	G4477-P0B-000-0010-1-100720	TPV MODEL	LNPCAB351AAB2	Rev	1
Key Component	02.INVERTER	PCB NAME	715G4497-P0B-000-0010	称 爹	ODM MODEL
Date	Tuesday , March 29, 2011	Sheet	2 of 3		

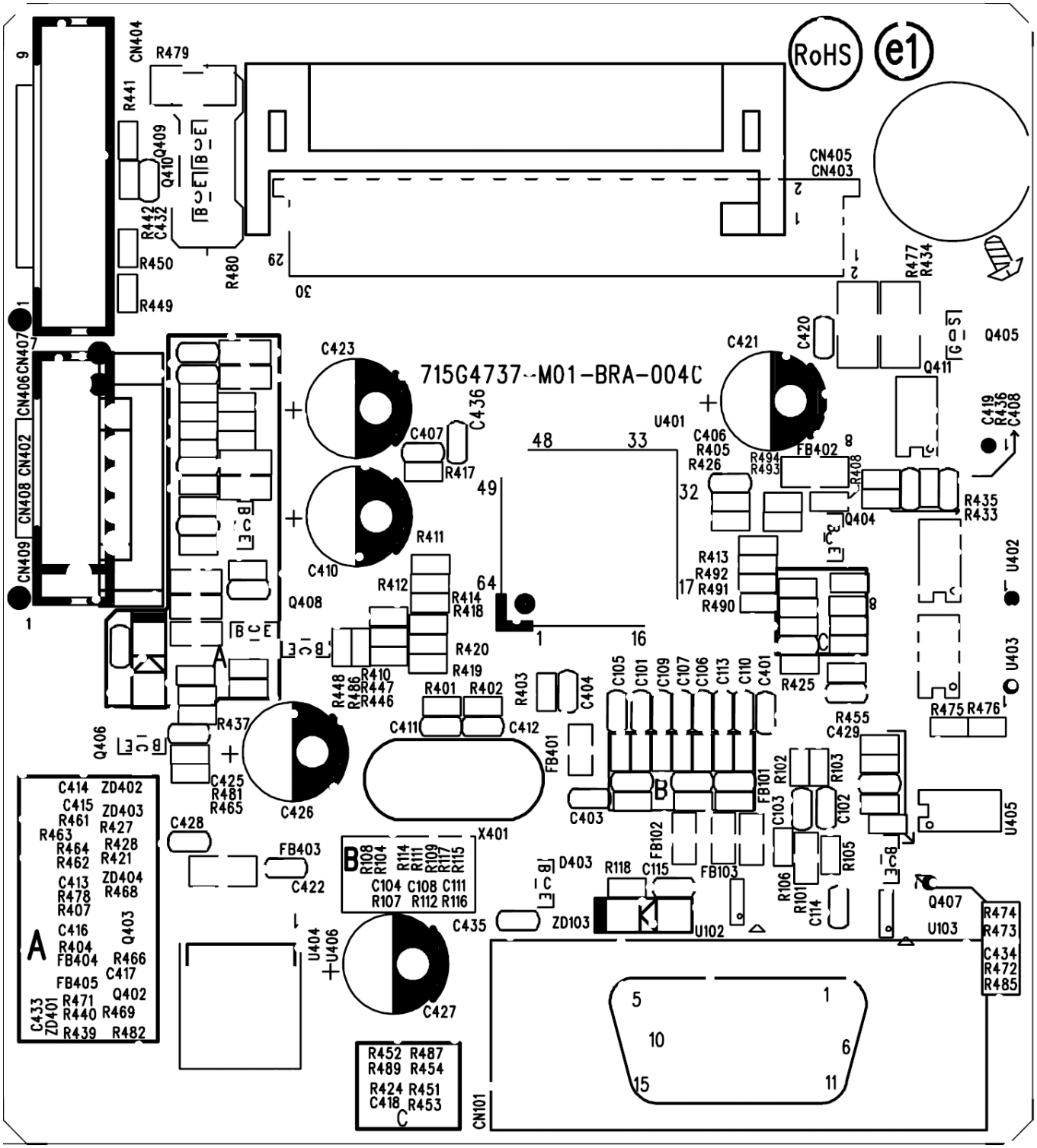
7. PCB Layout

7.1 Main Board

715G4737M01BRA004C

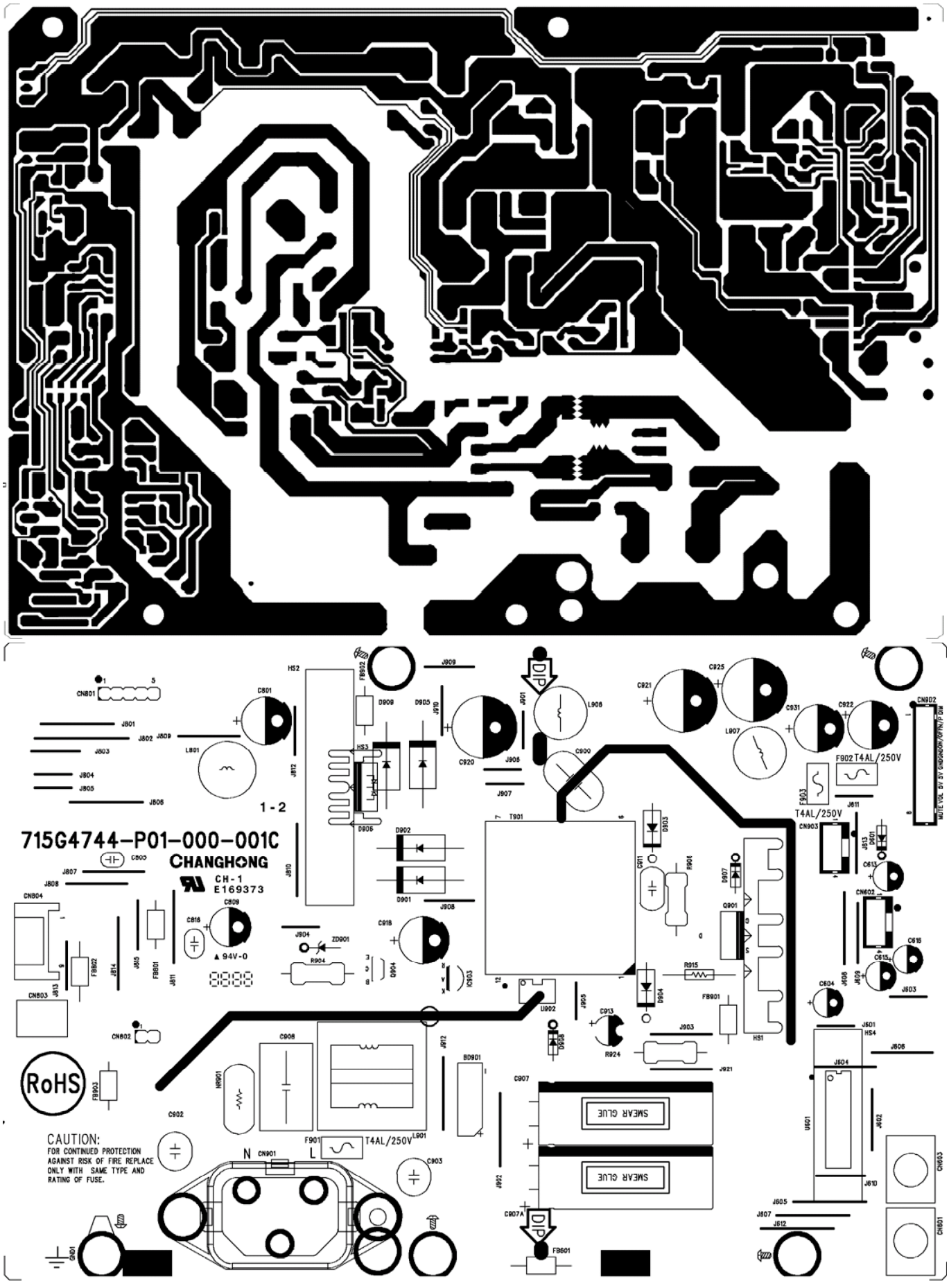




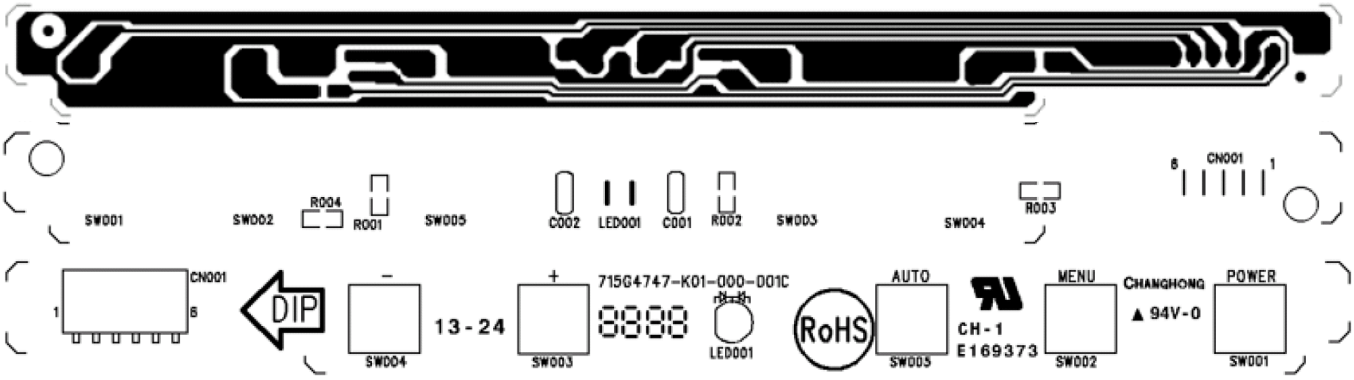

RoHS
e1
715G4737-M01-BRA-004C
CN404
CN405
CN403
CN407
CN406
CN402
CN408
CN409
CN101
U401
U402
U403
U404
U405
U406
U102
U103
X401
Q405
Q411
Q404
Q408
Q406
Q407
Q403
Q402
ZD402
ZD403
ZD404
ZD401
ZD103
D403
FB402
FB404
FB405
FB403
FB401
FB101
FB102
FB103
C423
C436
C407
C421
C420
C406
C410
C411
C412
C425
C426
C427
C428
C422
C435
C403
C404
C429
C419
C408
C401
C101
C102
C103
C104
C105
C106
C107
C108
C109
C110
C111
C113
C114
C115
R479
R441
R442
R432
R450
R449
R480
R477
R434
R435
R433
R405
R426
R494
R493
R408
R413
R492
R491
R490
R425
R455
R475
R476
R474
R473
R434
R472
R485
R401
R402
R403
R411
R412
R414
R418
R420
R419
R410
R448
R486
R447
R446
R437
R481
R465
R461
R463
R427
R464
R428
R462
R421
R478
R468
R407
R416
R404
R466
R417
R471
R440
R469
R439
R482
R108
R104
R114
R111
R109
R117
R115
R107
R112
R116
R118
R102
R103
R105
R106
R101
R452
R487
R489
R454
R424
R451
R418
R453
C
A
B
1
16
48
33
49
32
64
17
30
29
2
1
5
10
15
6
11

7.2 Power Board

715G4744P01000001C



7.3 Key Board
715G4747K01000001C



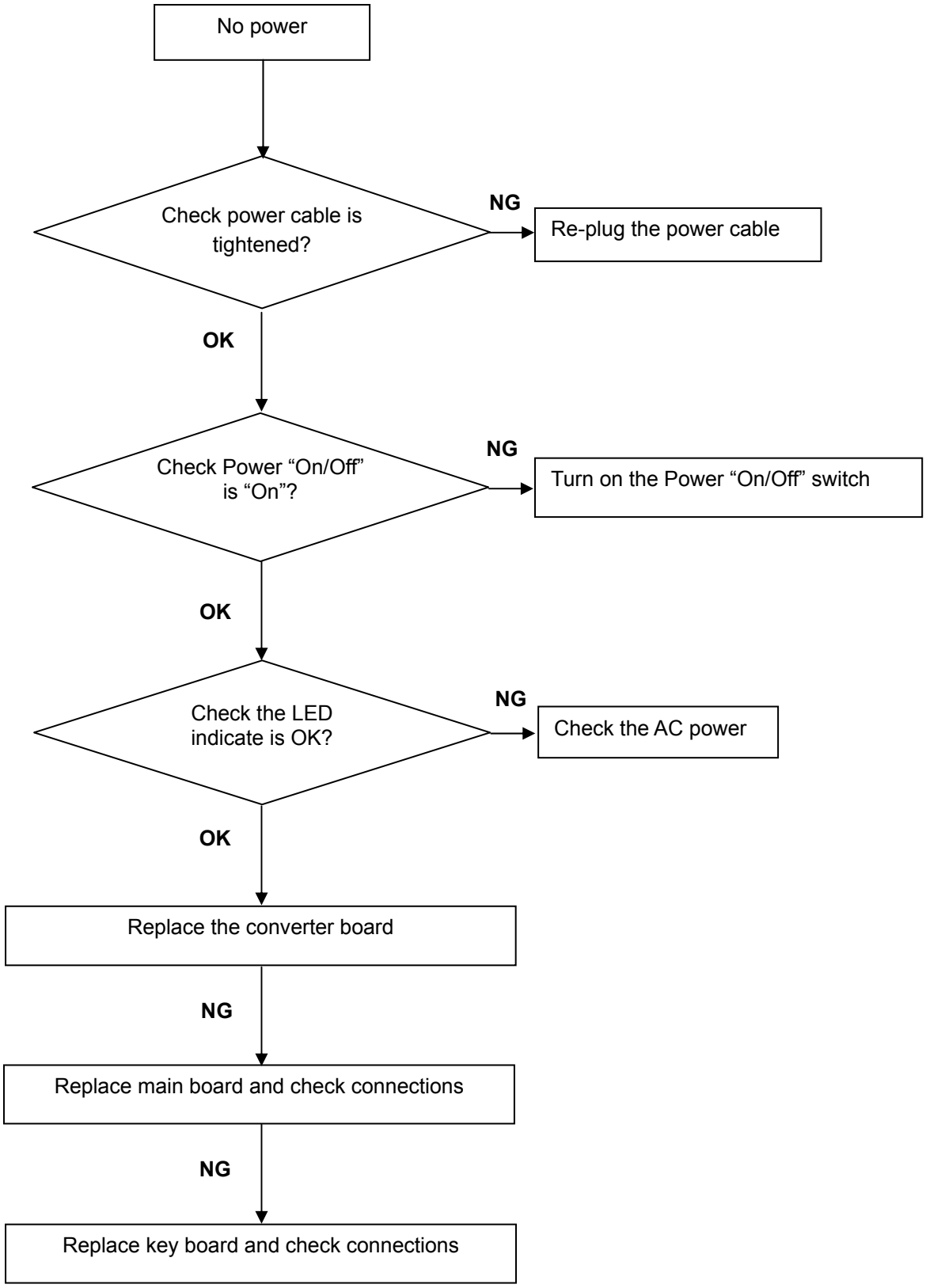
8. Maintainability

8.1 Equipments and Tools Requirement

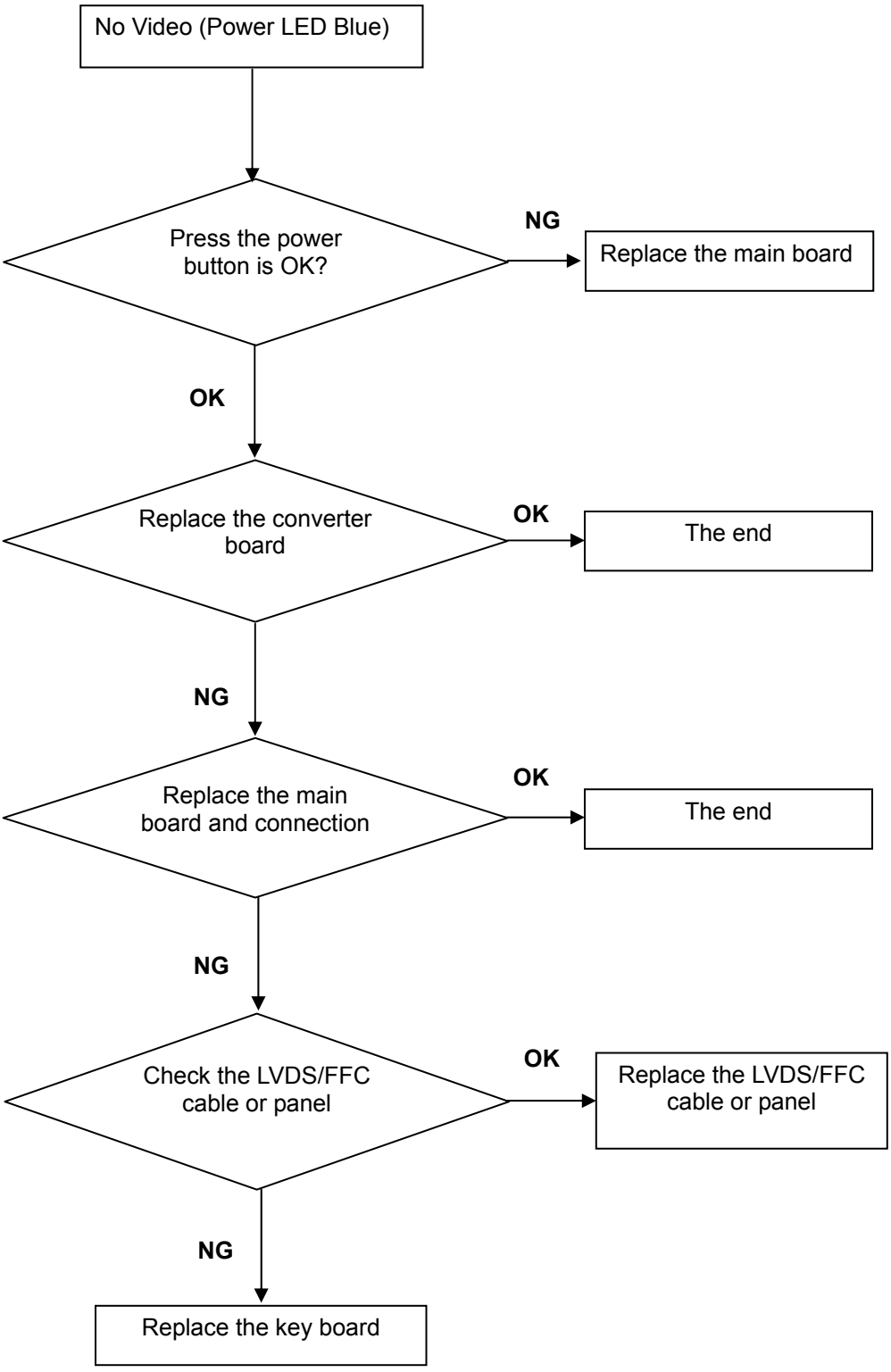
1. Voltmeter.
2. Oscilloscope.
3. Pattern Generator.
4. DDC Tool with an IBM Compatible Computer.
5. Alignment Tool.
6. LCD Color Analyzer.
7. Service Manual.
8. User Manual.

8.2 Trouble Shooting

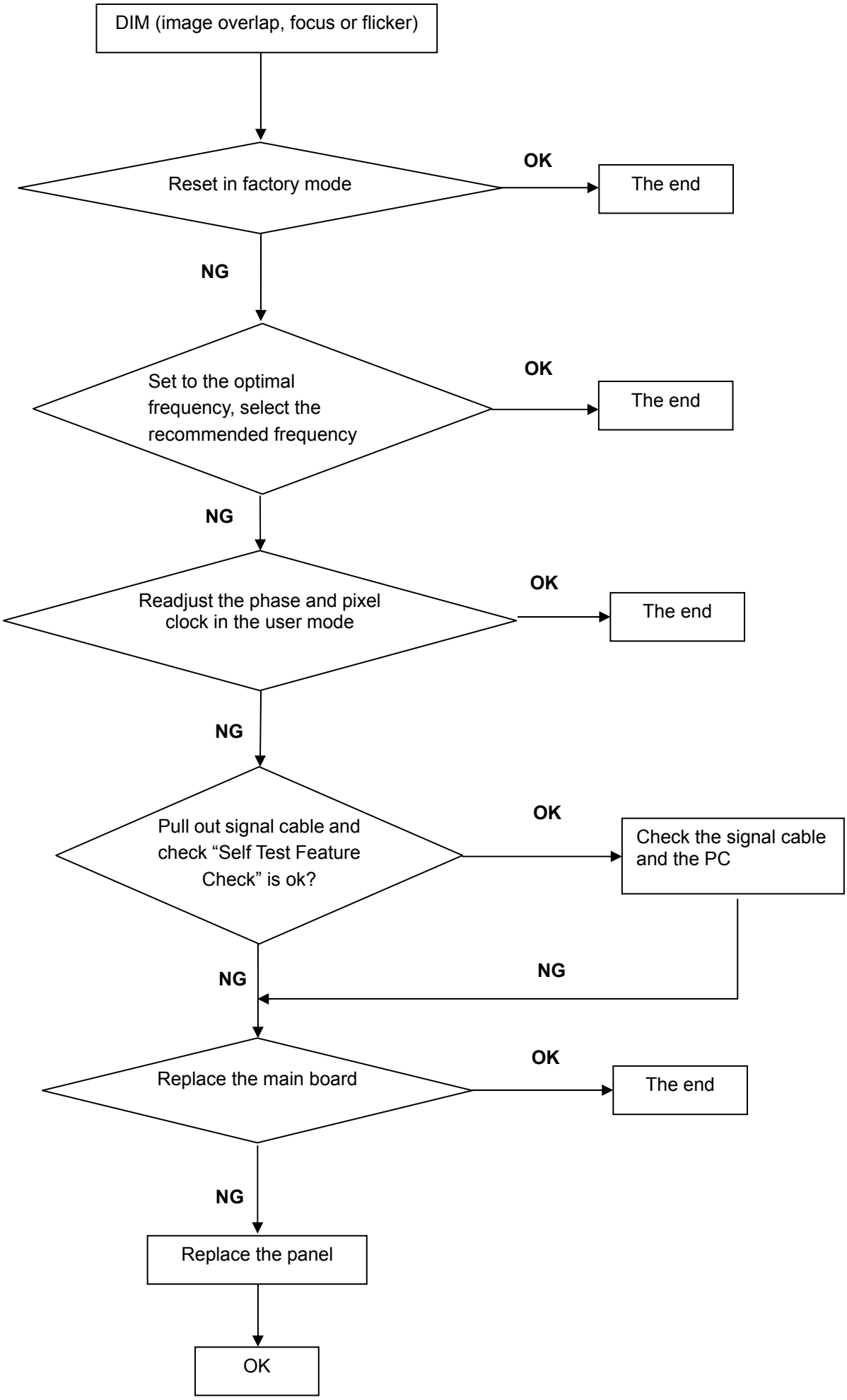
1. No Power



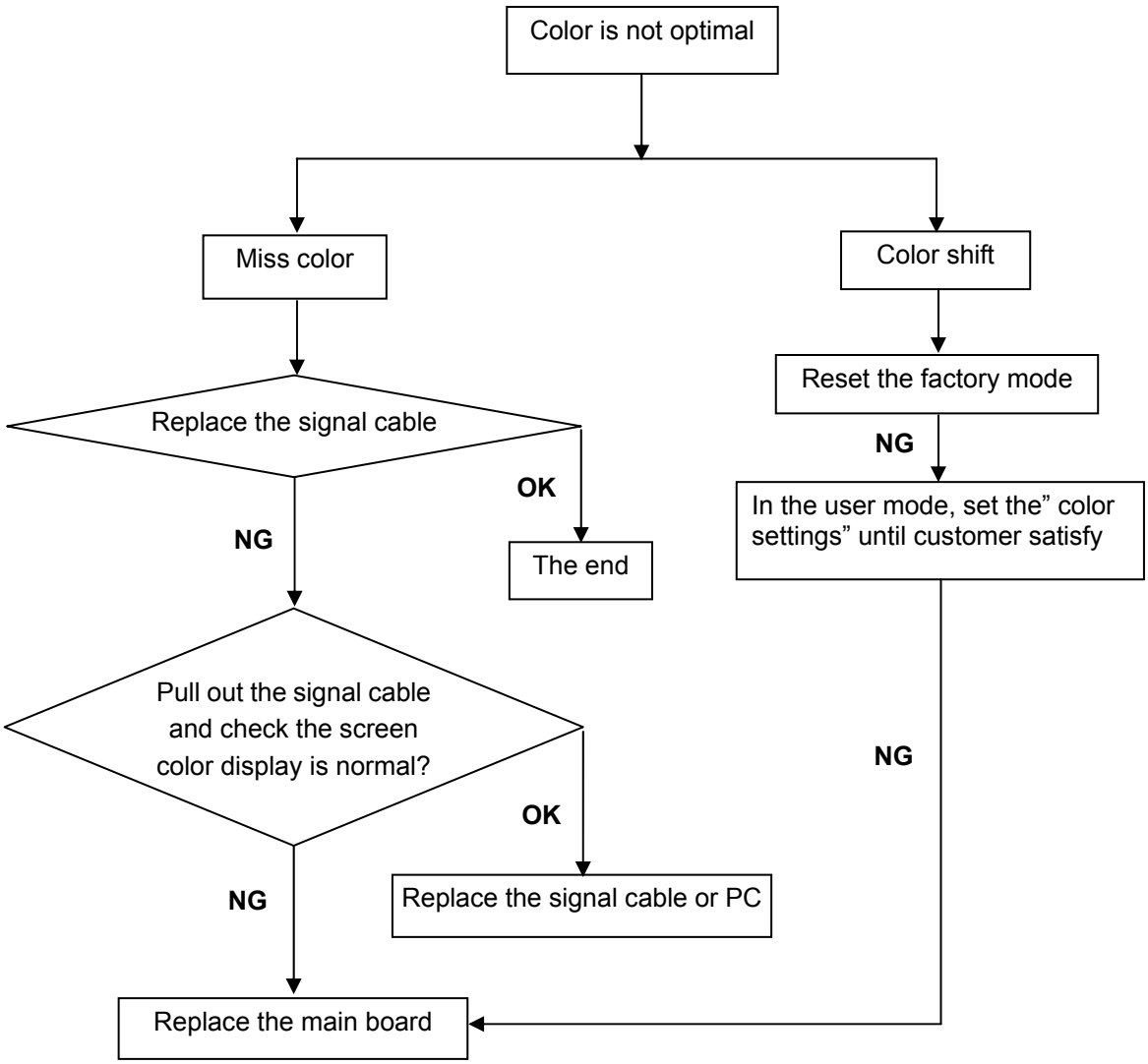
2. No Video (Power LED Blue)



3. DIM


DIM (image overlap, focus or flicker)
Reset in factory mode
OK
The end
NG
Set to the optimal frequency, select the recommended frequency
OK
The end
NG
Readjust the phase and pixel clock in the user mode
OK
The end
NG
Pull out signal cable and check “Self Test Feature Check” is ok?
OK
Check the signal cable and the PC
NG
NG
Replace the main board
OK
The end
NG
Replace the panel
OK

4. Color is not optimal



9. FOS Testing

9.1 Brightness Measurement

Max. Brightness>250 cd/㎡(typ).

Test conditions:

- Center of display
- Video input (RGB) = 0,700V for Analog Input
- Brightness control is set to max
- Contrast control is set to max.

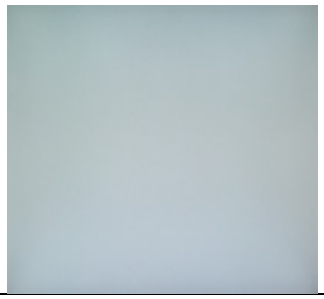
Min. brightness measurement:

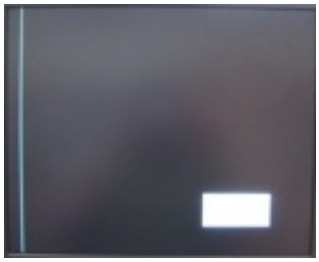
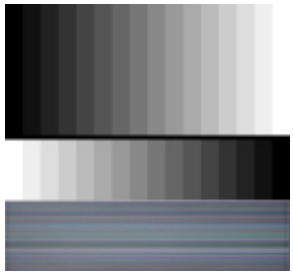
< 45% of Max luminance (max luminance = max contrast + max brightness)

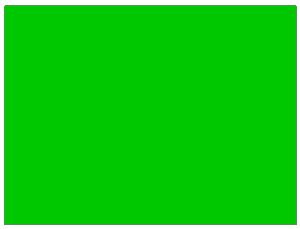
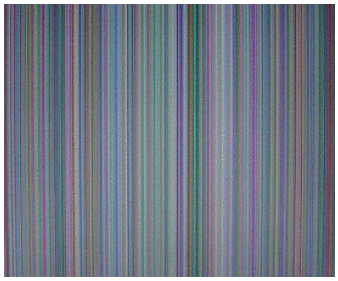
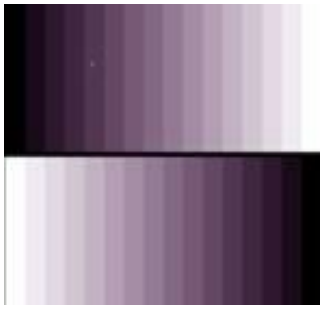
Test conditions: - Center of display

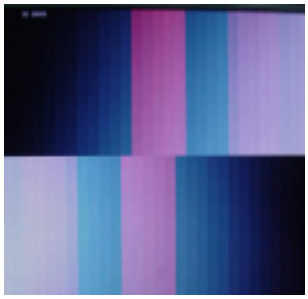
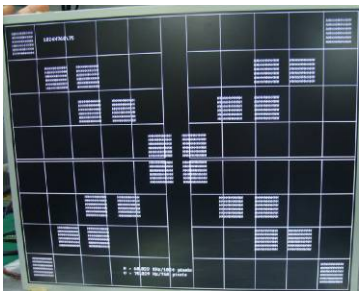
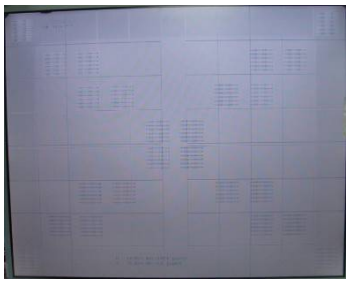
- Video input (RGB) = 0.700V for Analog Input
- Brightness control is set to min.
- Contrast control is set to min.

9.2 Patterns Testing

Item	Condition (Resolution, Commended test paten)	Normal picture	Abnormal Picture
Waterwave noise	1. 1920 x 1080 (60 Hz) 2. White pattern		
Mura	1. 1920 x 1080 (60 Hz) 2. Black pattern or White pattern.		
LCD bubble	1. 1920 x 1080 (60 Hz) 2. Black pattern or White pattern		

Cross line	1. 1920 x 1080 (60 Hz) 2. Black pattern		
Half line	1. 1920 x 1080 (60 Hz) 2. Black pattern or White pattern		
H-Line	1. 1920 x 1080 (60 Hz) 2. Black pattern, Red pattern, Green pattern or Blue pattern.		
V-Line	1. 1920 x 1080 (60 Hz) 2. Black pattern or White pattern		
H-Strip	1 1920 x 1080 (60 Hz) 2. Black pattern, Gray scale pattern, Red pattern, Green pattern or blue pattern .		

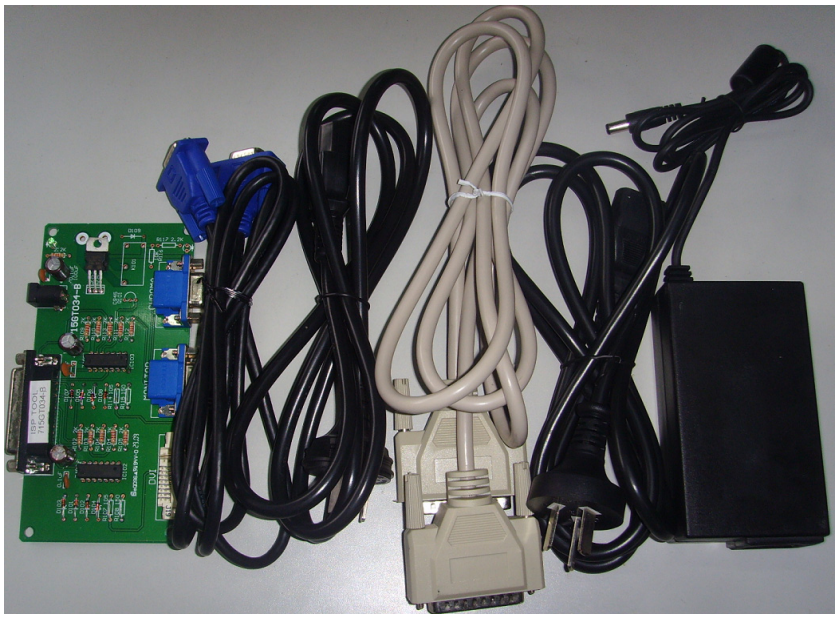
V-Strip	1. 1920 x 1080 (60 Hz) 2. Black pattern, Gray scale pattern, Red pattern, Green pattern or blue pattern .		
Abnormal display	1. 1920 x 1080 (60 Hz) 2. Gray scale pattern		
Gray defect	1. 1920 x 1080 (60 Hz) 2. Gray scale pattern		
Video noise	1. 1920 x 1080 (60 Hz) 2. Gray scale pattern		
Color tint	1. 1920 x 1080 (60 Hz) 2. Gray scale pattern		

Gray scale failure	1. 1920 x 1080 (60 Hz) 2. Gray scale pattern		
Light leakage	1. 1920 x 1080 (60 Hz) 2. Black pattern or White pattern		
Fuzzy video	1. 1920 x 1080 (60 Hz) 2. Pane picture		

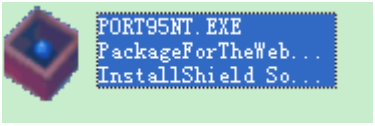
10. Firmware and DDC Instruction
11. Firmware and DDC Instruction
10.1Firmware Instruction(TSUM IC ISP for exemple Milo Qw1904e)
Step 1:Tool list：

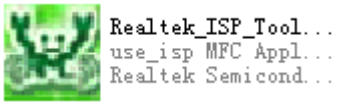
1. ISP board715GT034-B.
2. Printer cable and VGA cable
3. Adapter cable(12V)
4. Two three-core cables

Reference picture as below：

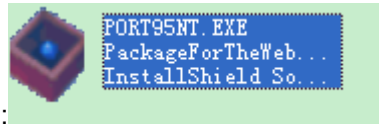


Step2: Software list：

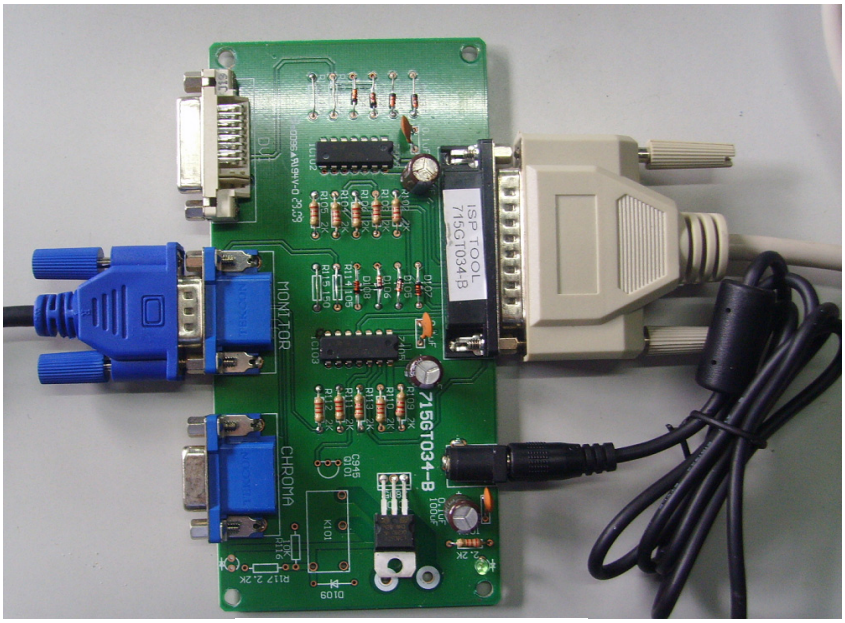
1. LPT driver 

2. Realtek_ISP_Tool_V2.2 

Step3: Setup Software and Connection：

1. Setup LPT driver:run Port95nt icon: 

2. LPT cable connect PC and ISP board ,VGA cable connect monitor and ISP board , picture as below:

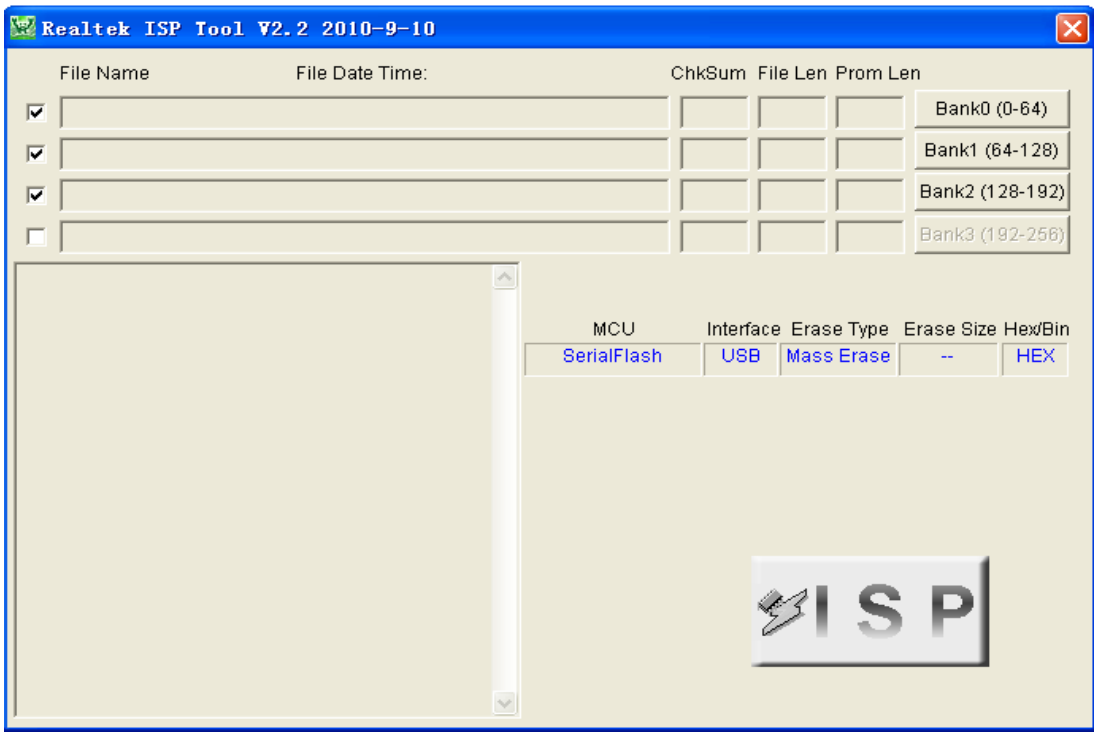


3. **double-click** Realtek_ISP_Tool_V2.2

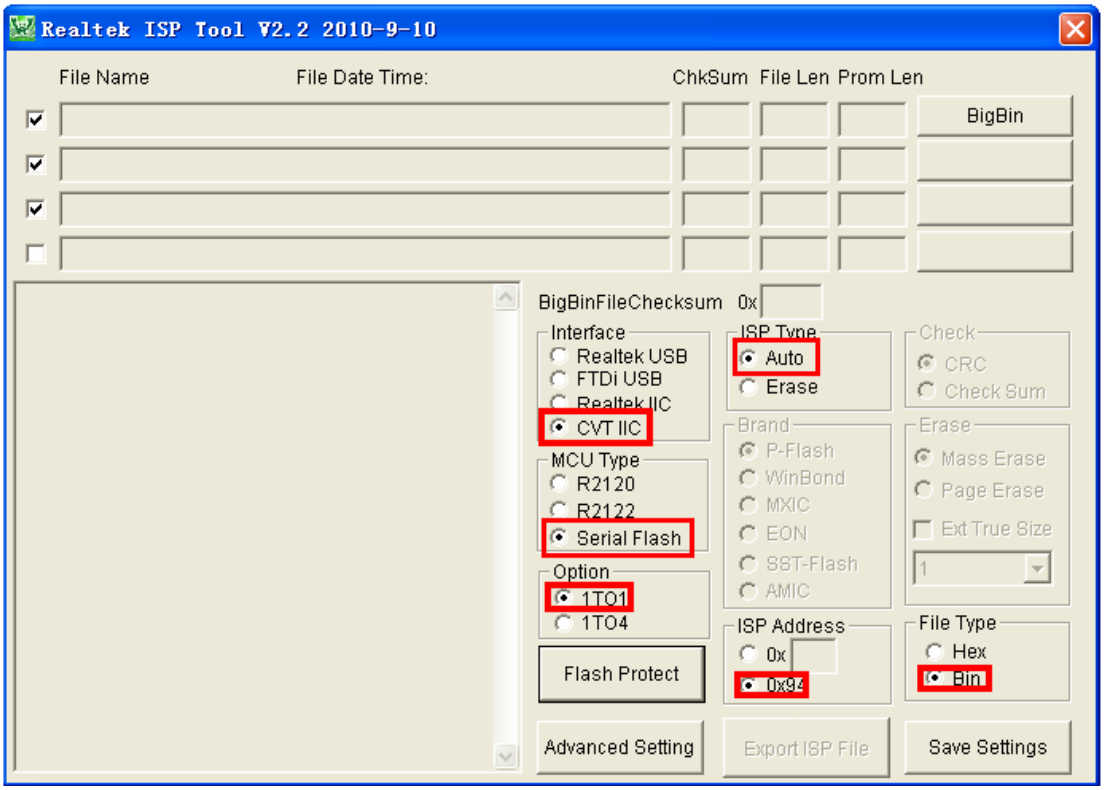
。

Step4: Program：

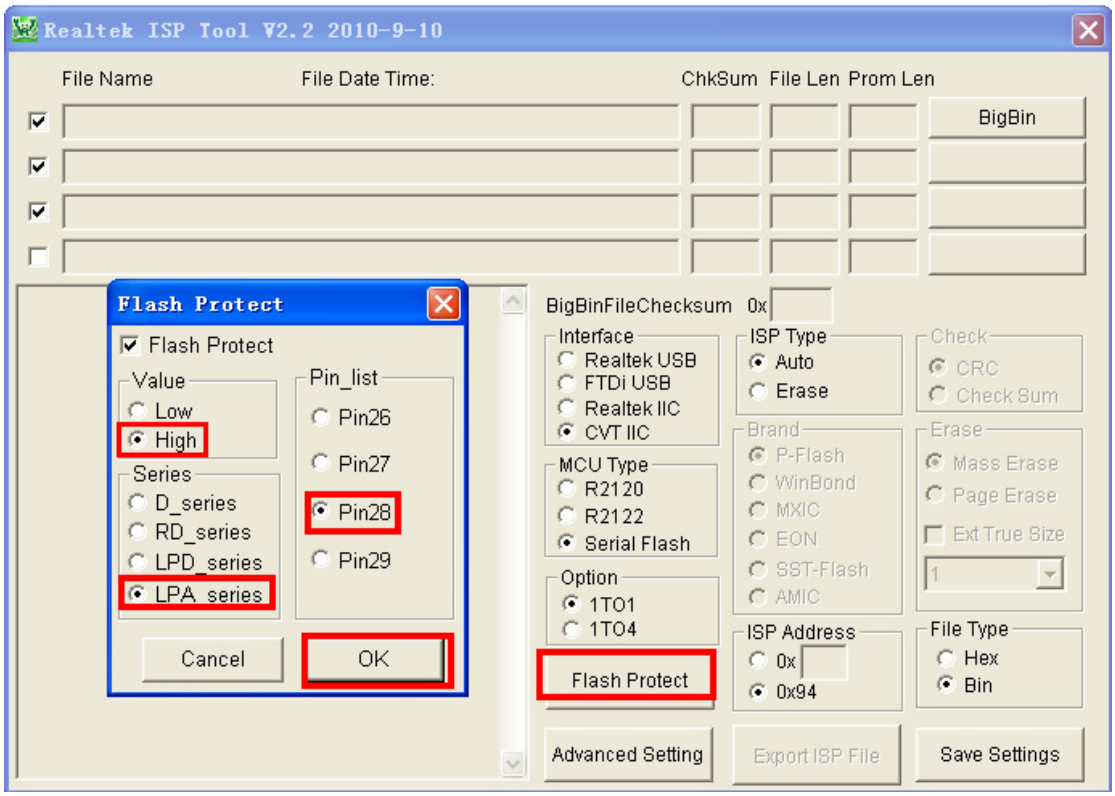
1. Run realtek_ISP_Tool_V2.2,interface as below:



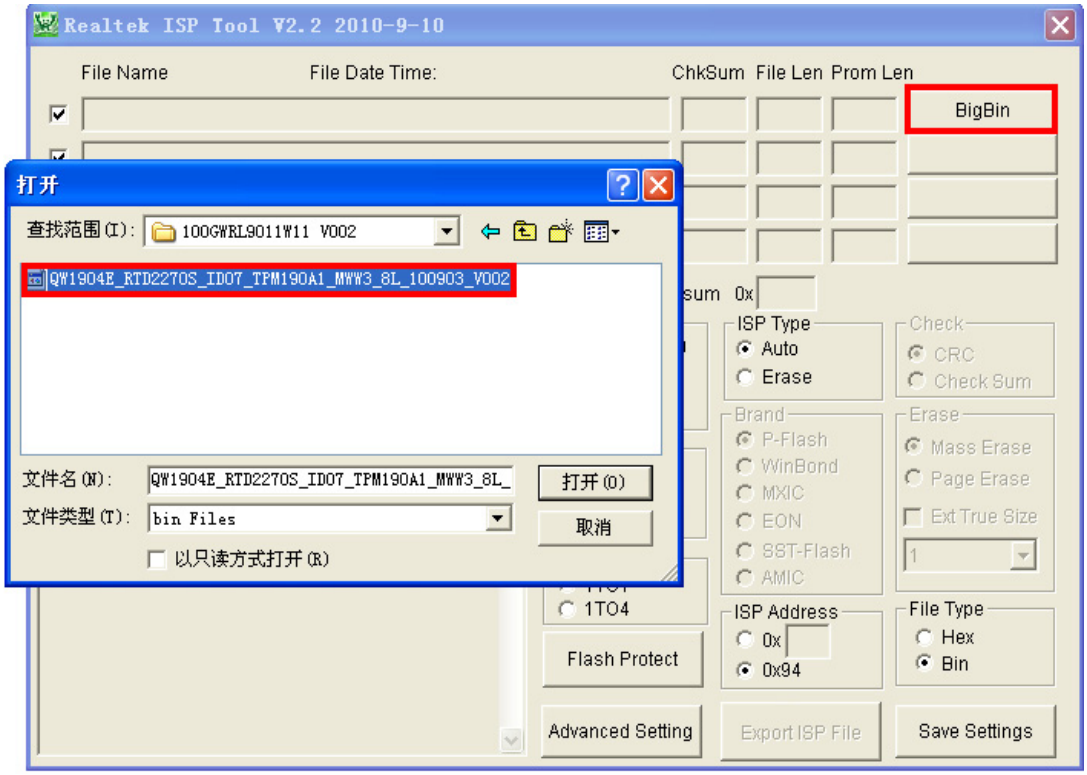
2. Press down the Ctrl+Alt at the keyboard , in turn, choice Interface→CVT IIC;MCU Type→Serial Flash；Option→1TO1;ISP Type→Auto；ISP Address→0x94；File Type→Bin。



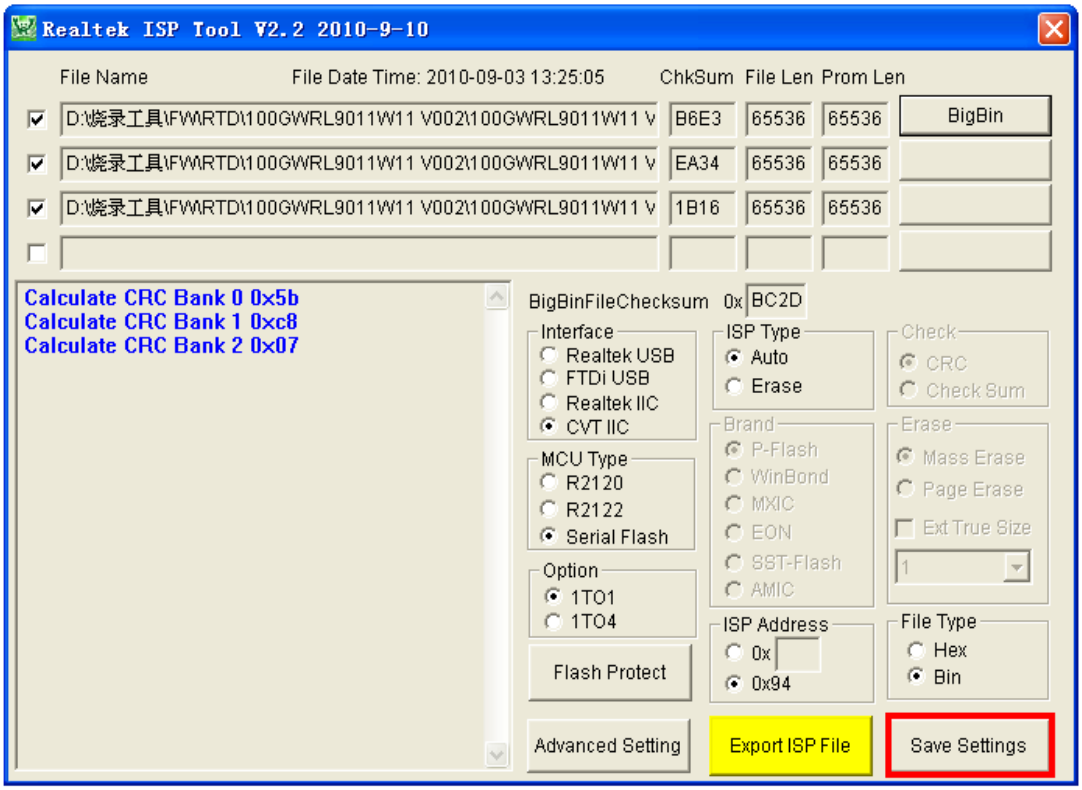
3. Click “Flash Protect” and interface show dialog box，in turn, choice Value→High；Series→LPA series；Pin List→Pin28；Click “OK”。



4. Click “BigBin”, show as follow picture, then choose correct software to click “open”,

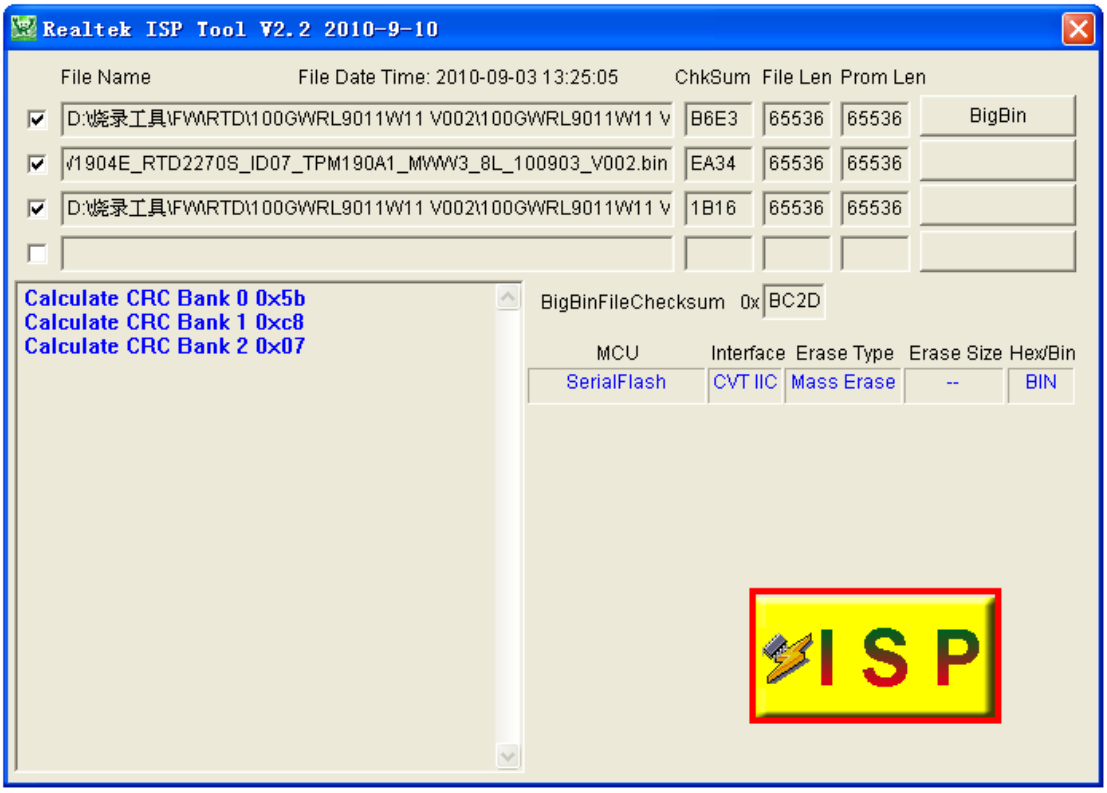


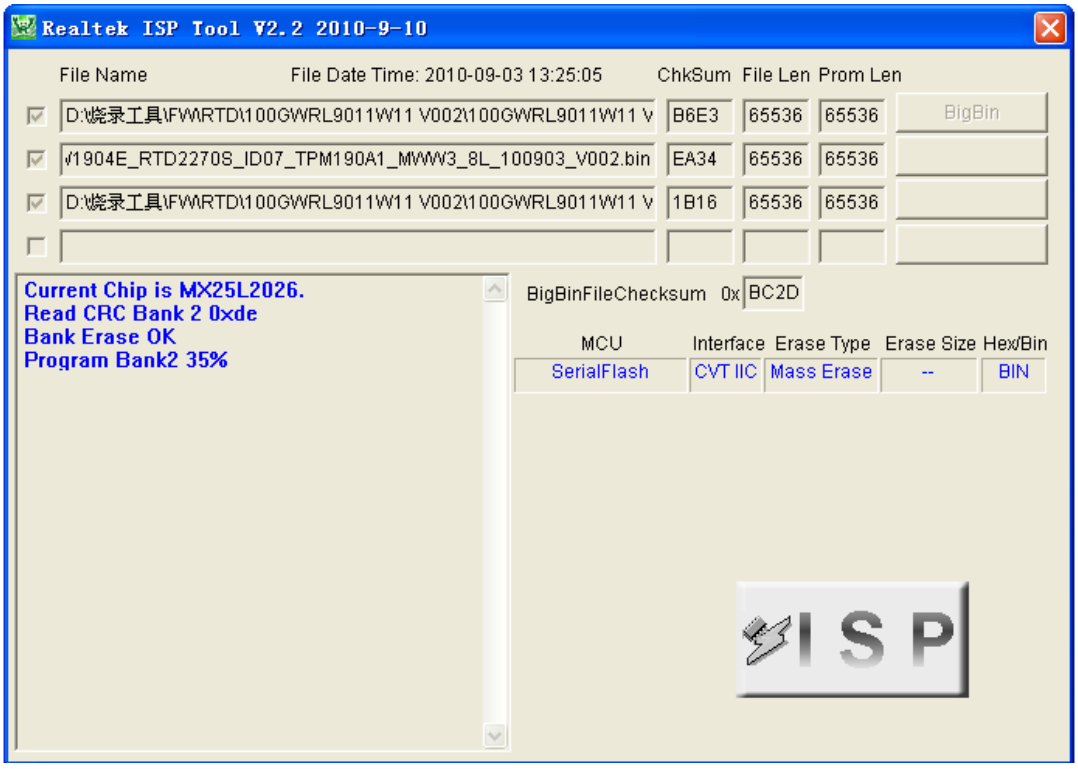
5. Then, Click “Save Settings”, as below,



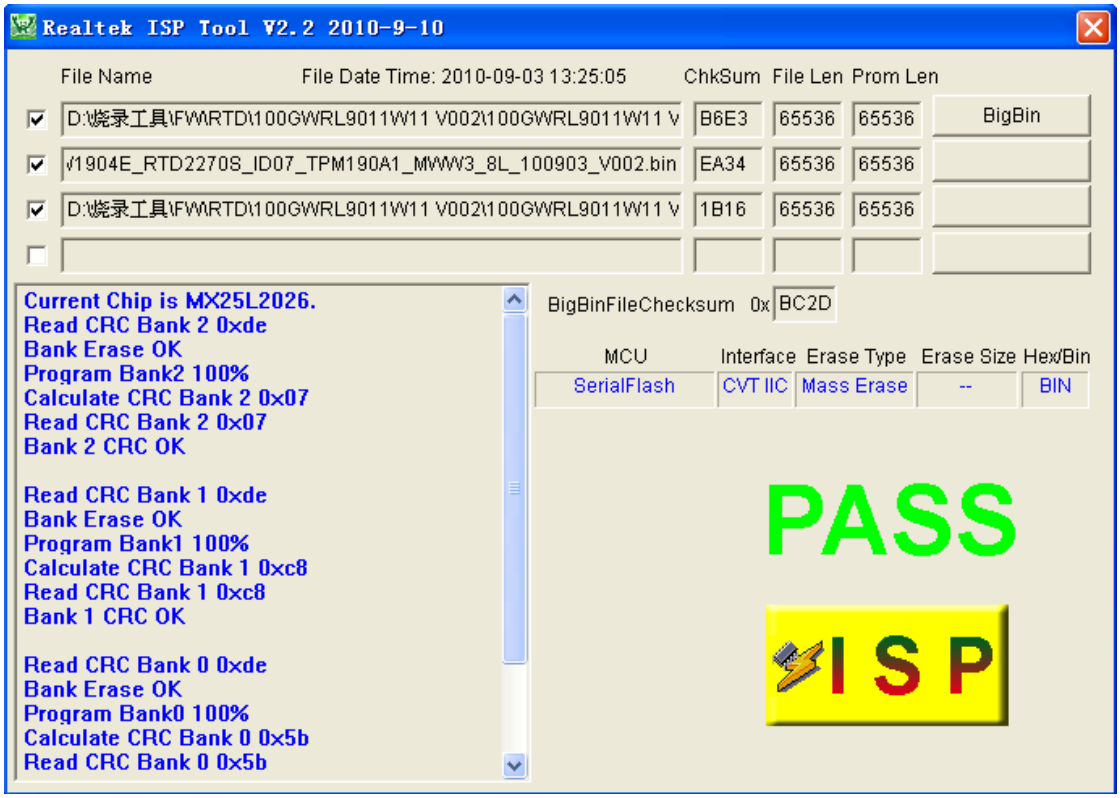
6. Show the interface as follows after press the

icon：





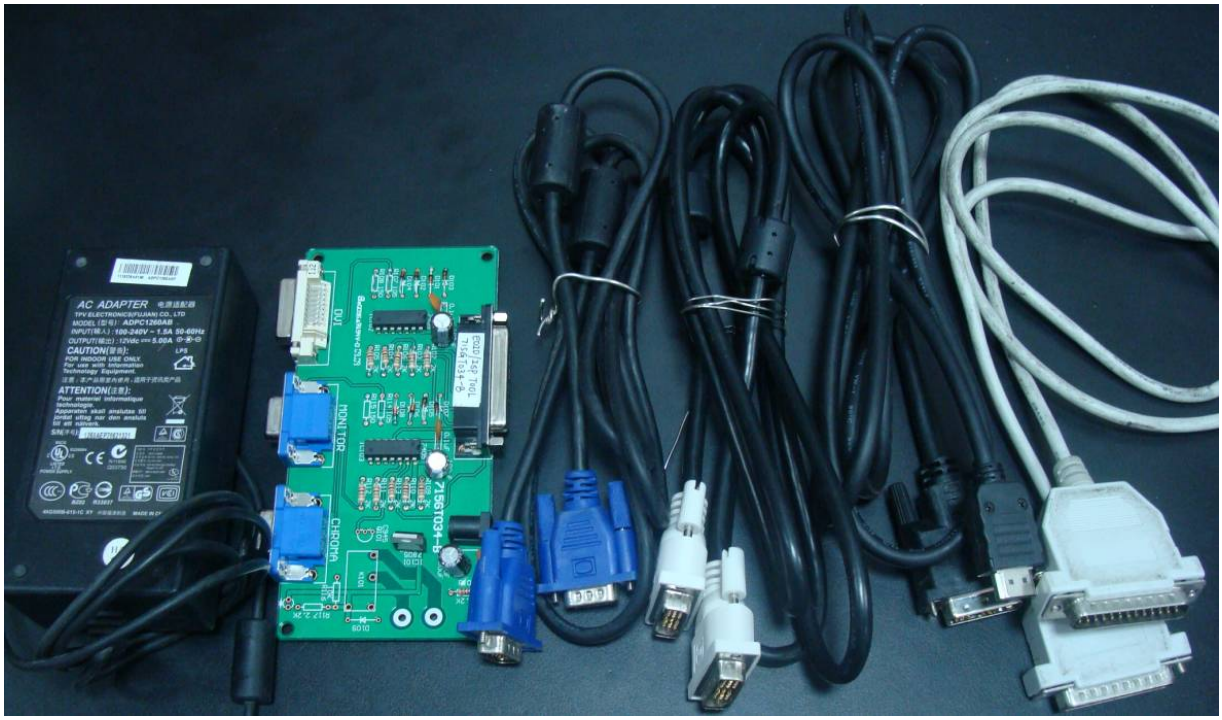
7. It’s successfully if interface show PASS.



10.2 DDC Instruction（For exemple：Philips 201B）

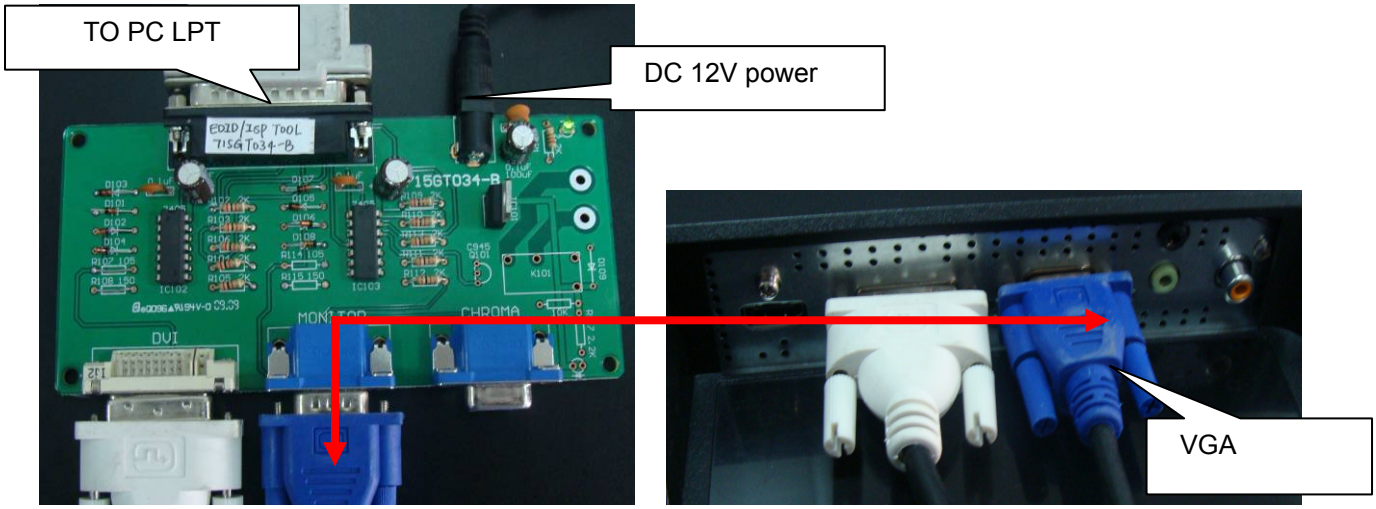
Tool list:

1. DDC board:715GT034-B
2. Software (WA.DAT&WD.DAT&*. CONFIG.INI)
3. LPT driver software
4. LPT cable, D-SUB CABLE
5. 12V(Adapter)
6. TPVDDCHDMI and TPVDDC6.0
7. PC
8. For example：MSTAR IC TSUMO58GDJ



Tool picture

For VGA BURNING: DDC Board as the follow picture:

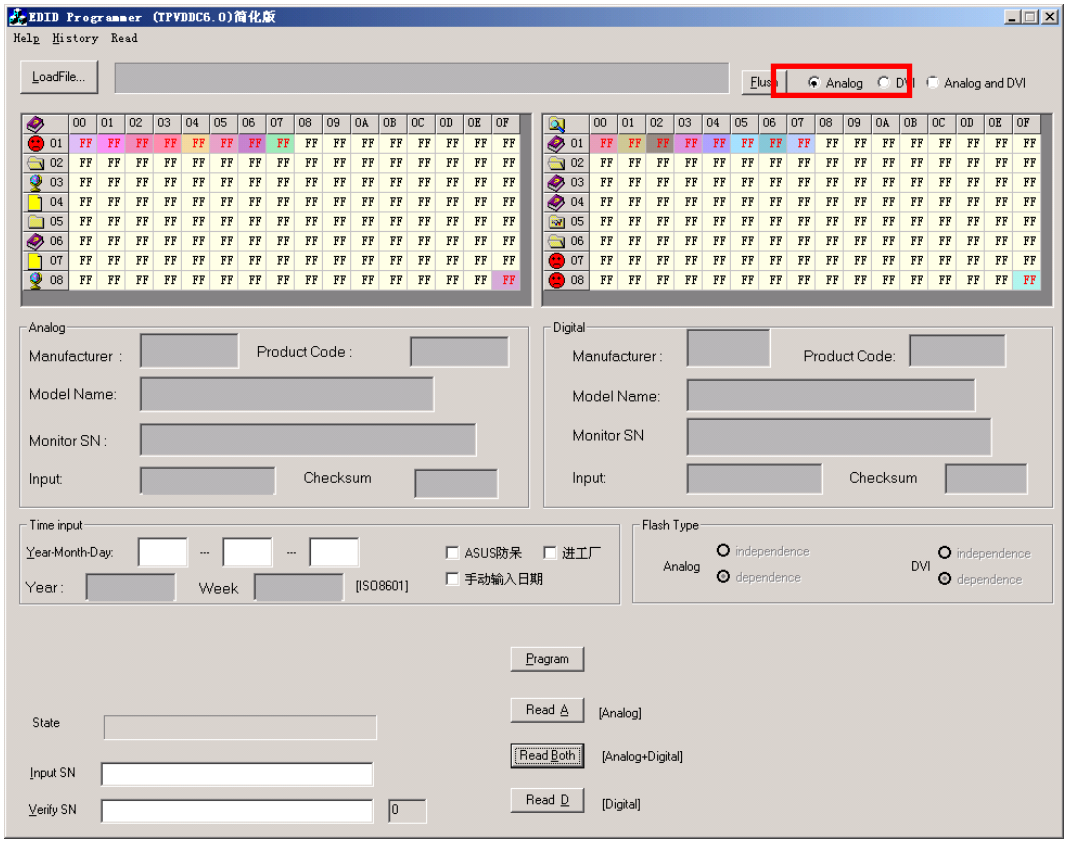


Install software:

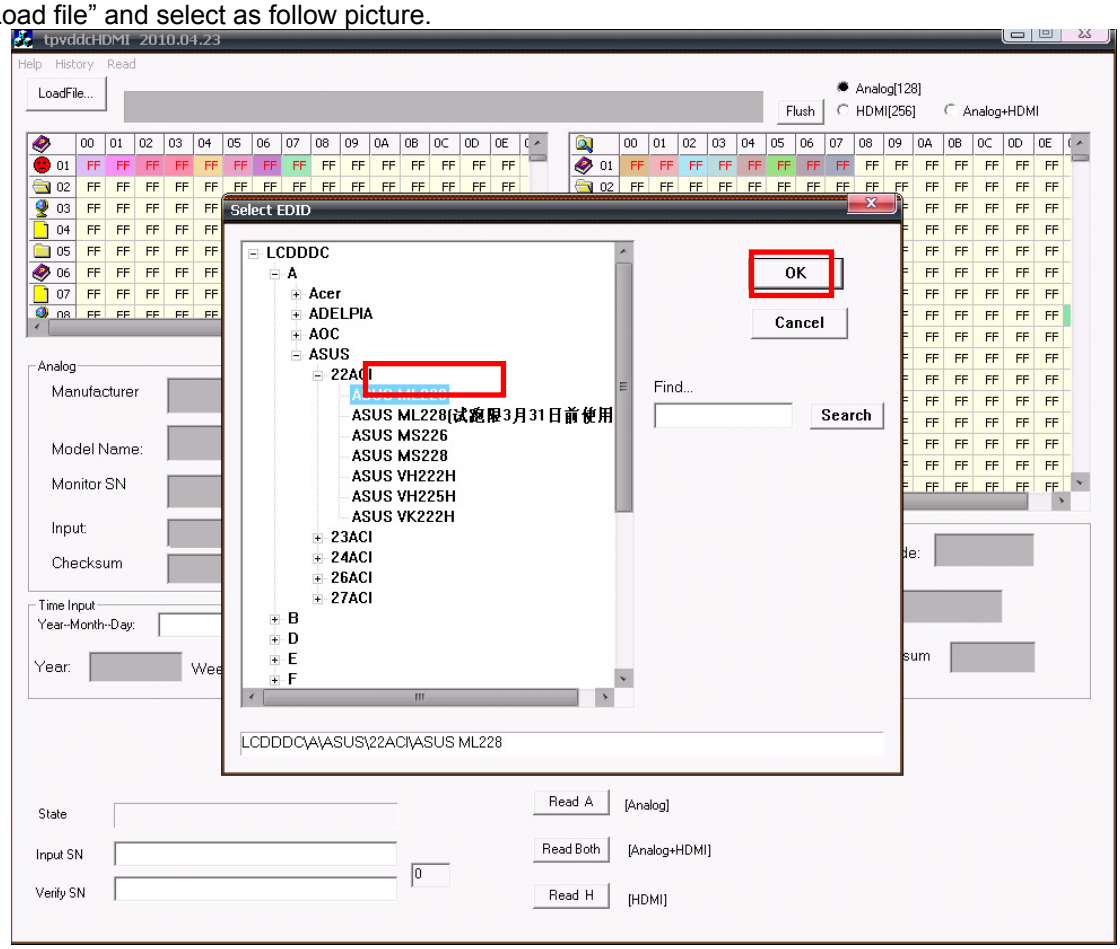
Double-click the icon “ ” to install Port95nt print driver, and then restart the computer.

VGA Burning:

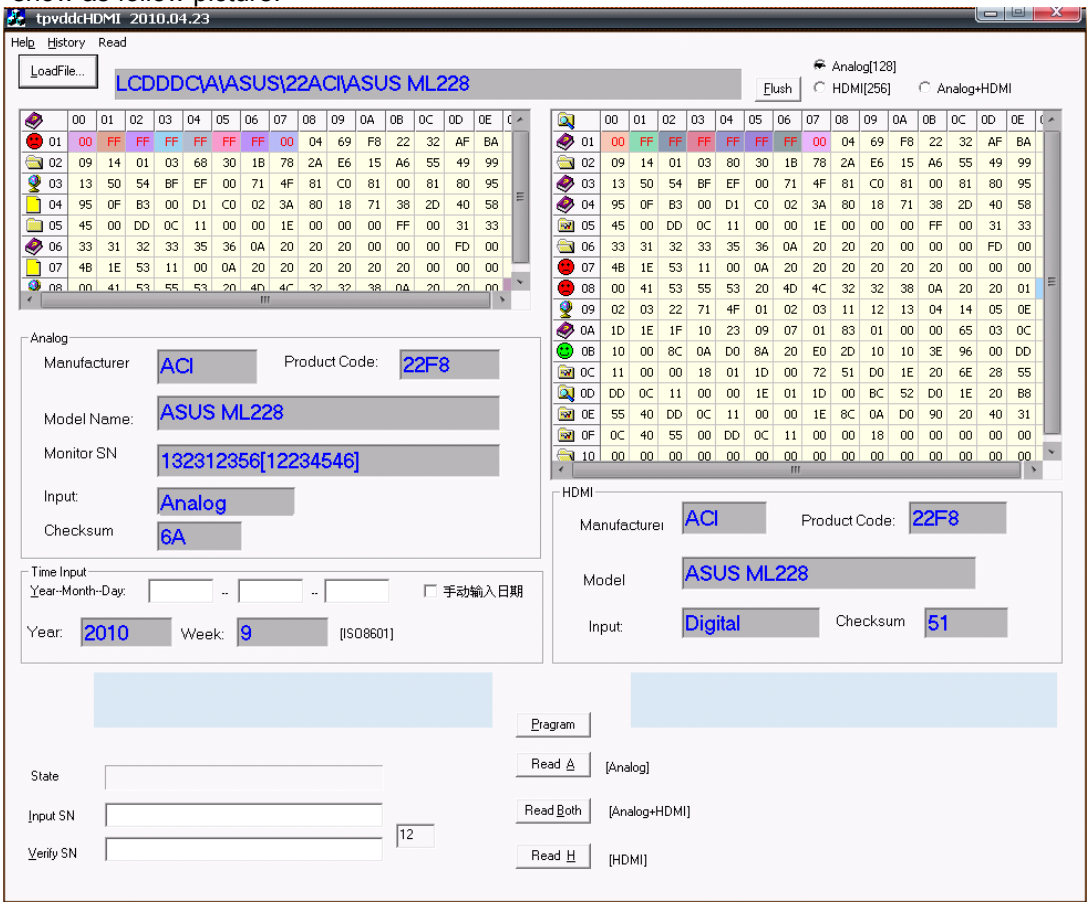
1. Double-click “ TPVDDCHDMI.exe WinDDC TPV ”, select “Analog ” show as follow picture.



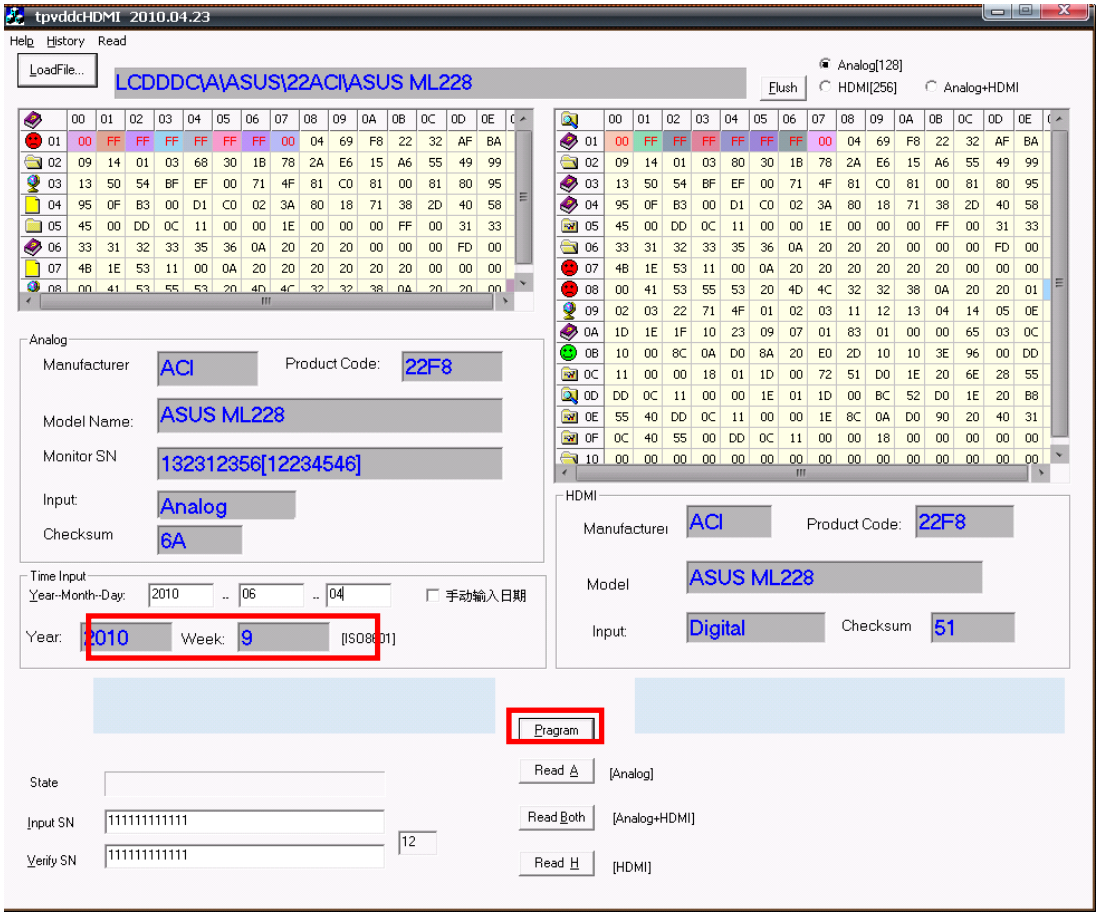
2. Click “Load file” and select as follow picture.

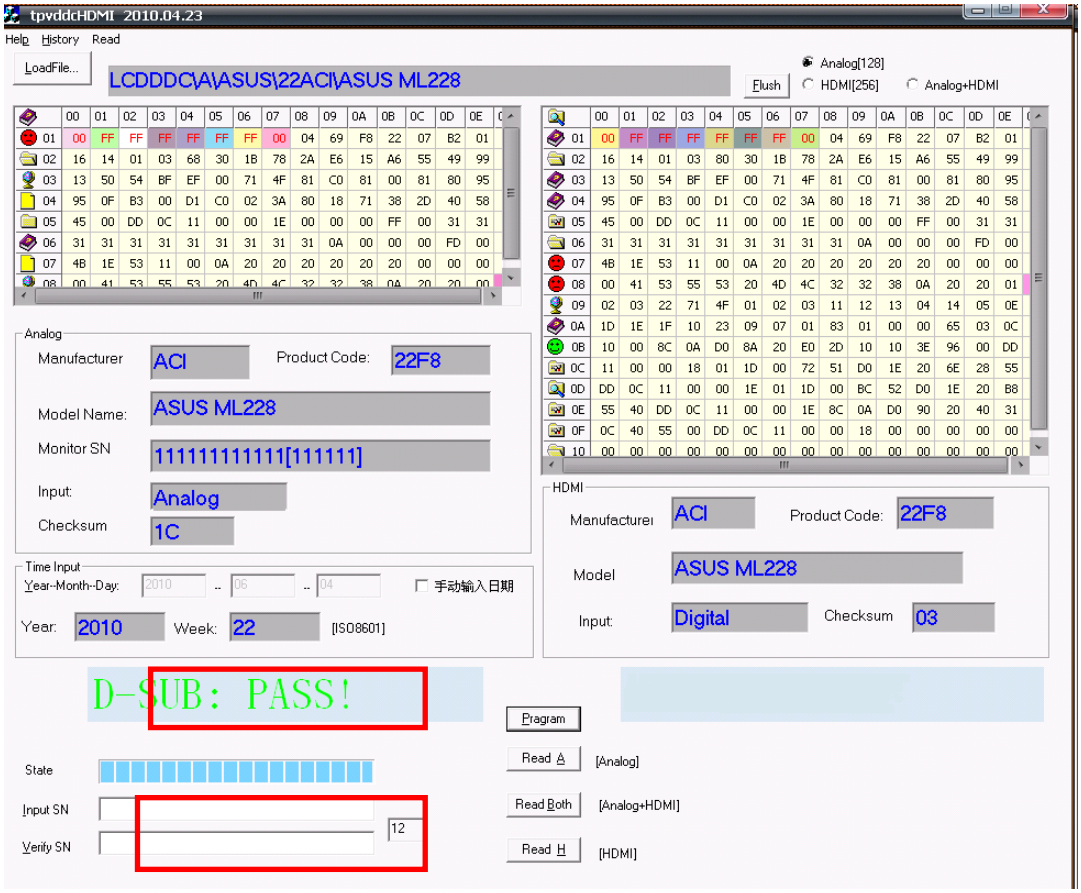


3. Click “ok” show as follow picture.

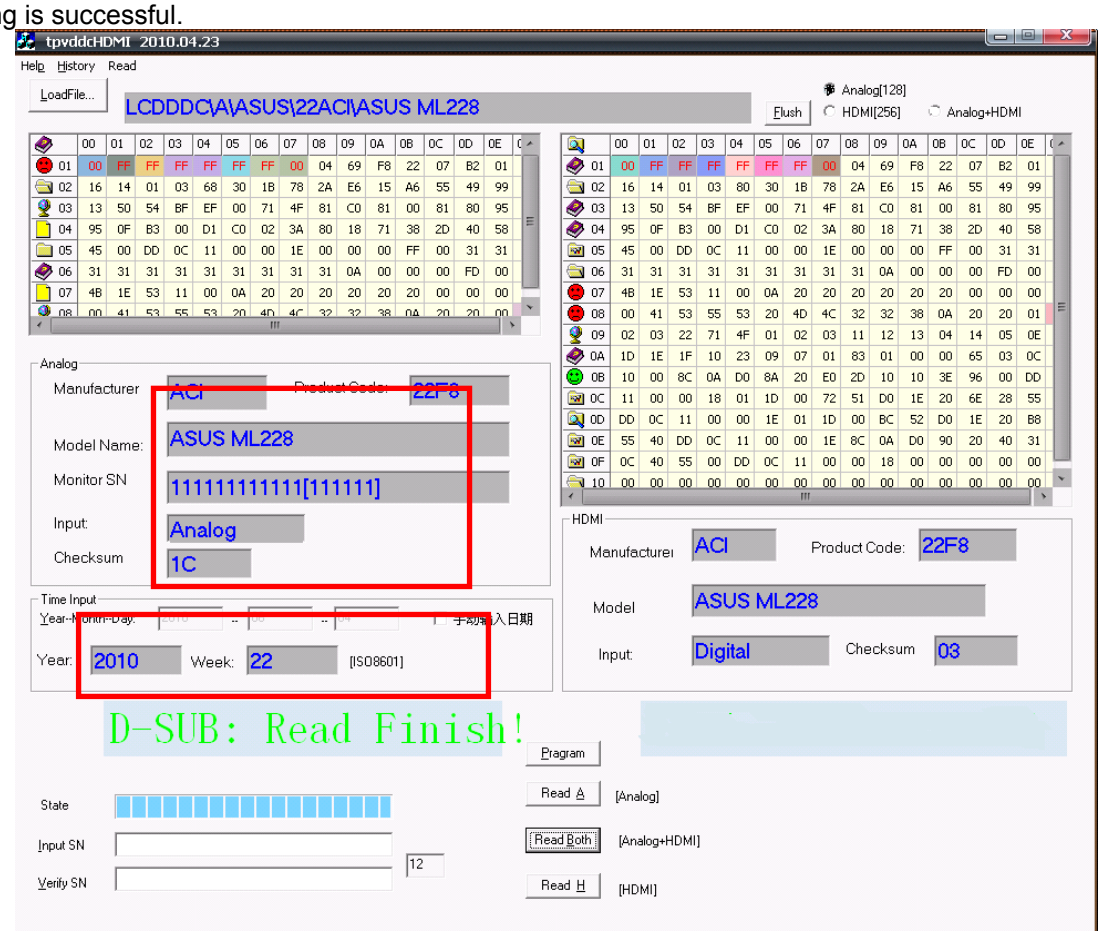


4.Input same SN twice and date. Click “Pragram” to burn. When appear “pass” as follow picture that burning is successful.

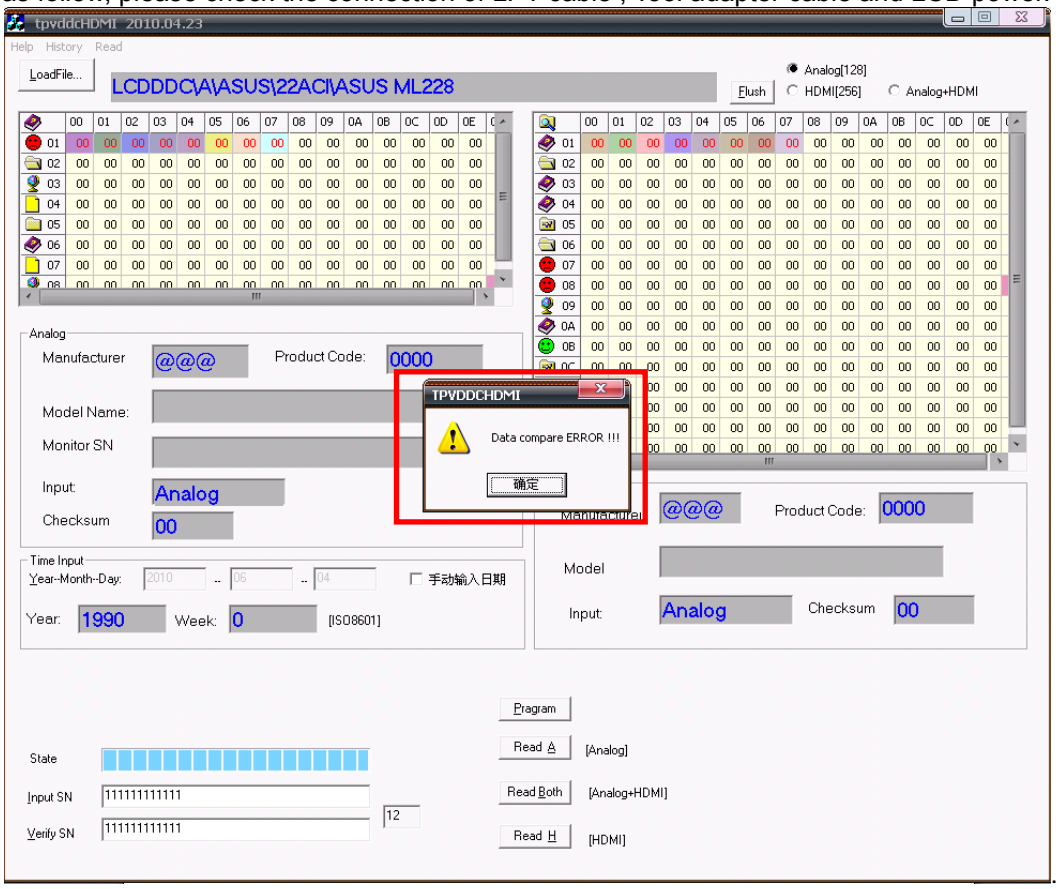




5.Click “READ” show as follow picuture.If read SN is same as before inputing and model name is same as before that burning is successful.



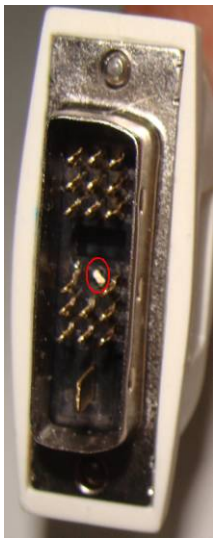
Appear fault as follow, please check the connection of LPT cable , Tool adapter cable and LCD power.



Note:
If the burn software is unsuccessfulll, appear fault：

1. For VGA,the resolution will be not the best achieve.
2. For HDMI,No picture，no sound.

If program failed, in VGA mode, you can't use the optimal resolution.
When Read is OK, program is NG, pls do take following action:
1. For VGA,cut off the 9th pin (connect the monitor).
2. For DVI, cut off the 14th pin (the shortest pin, power supply).
3. Connect the EEPROM WP pin to ground.



11.White- Balance, Luminance Adjustment

Approximately 30 minutes should be allowed for warm up before proceeding white balance adjustment.

How to setting MEM channel you can reference to chroma 7120 user guide or simple use “SC” key and “NEXT” Key to modify xyY value and use “ID” key to modify the TEXT description Following is the procedure to do white-balance adjust .

1. Setting the color temp.

A. 6500K:

Warm color temp. parameter is x=313±30， y=329±30

B. 7300K

Normal color temp. parameter is x=302±30， y=318±30

C. 9300K

Cool color temp. parameter is x=283±30，y=297±30

D. sRGB

sRGB color temp. parameter is x=313±30， y=329±30

2. Enter into the factory mode:

Press the MENU button,Pull out the power cord, then plug the power cord. Then the factory OSD will be at the left top of the panel.

3. Biase adjustment:

Set the Contrast to 50; Adjust the Brightness to 90.

4. Gain adjustment:

A. Adjust Warm (6500K) color-temperature

1. Switch the chroma-7120 to RGB-Mode (with press “MODE” button)
2. Switch the MEM.channel to Channel 3 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x=313±30， y=329±30
4. Adjust the RED on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN on factory window until chroma 7120 indicator reachedthe value G=100
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item4, 5, 6) until chroma 7120 RGB value meet the tolerance =100±2

B. Adjust Normal (7300K) color-temperature

1. Switch the chroma-7120 to RGB-Mode (with press “MODE” button)
2. Switch the MEM.channel to Channel 4(with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x=302±30， y=318±30
4. Adjust the RED on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN on factory window until chroma 7120 indicator reachedthe value G=100
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance =100±2

C. Adjust Cool (9300K) color-temperature

1. Switch the Chroma-7120 to RGB-Mode (with press “MODE” button)
2. Switch the MEM. Channel to Channel 9 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x=283±30，y=297±30
4. Adjust the RED on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN on factory window until chroma 7120 indicator reached the value G=100
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance =100±2

D. Adjust sRGB color-temperature

1. Switch the chroma-7120 to RGB-Mode (with press “MODE” button)
2. Switch the MEM.channel to Channel 10 (with up or down arrow on chroma 7120)
3. The LCD-indicator on chroma 7120 will show x=313±30，y=329±30
4. Adjust the RED on factory window until chroma 7120 indicator reached the value R=100
5. Adjust the GREEN on factory window until chroma 7120 indicator reachedthe value G=100
6. Adjust the BLUE on factory window until chroma 7120 indicator reached the value B=100
7. Repeat above procedure (item 4, 5, 6) until chroma 7120 RGB value meet the tolerance =100±2

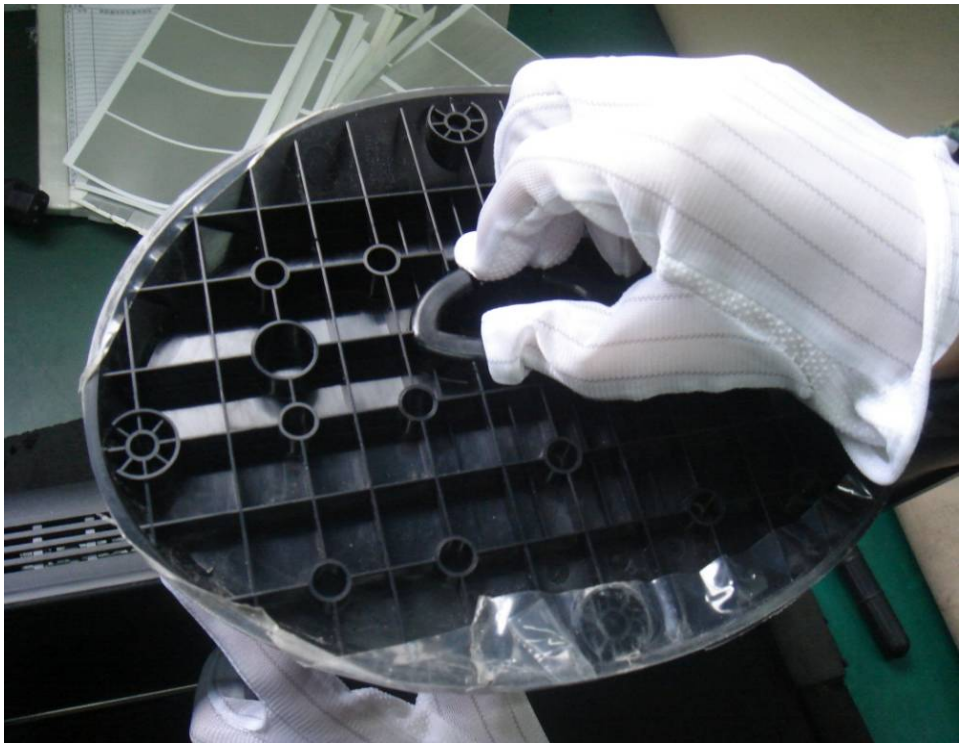
E. Turn the Power-button off to quit from factory mode.

12.Mechanical Instructions

1. Put the monitor on the EPE pad.

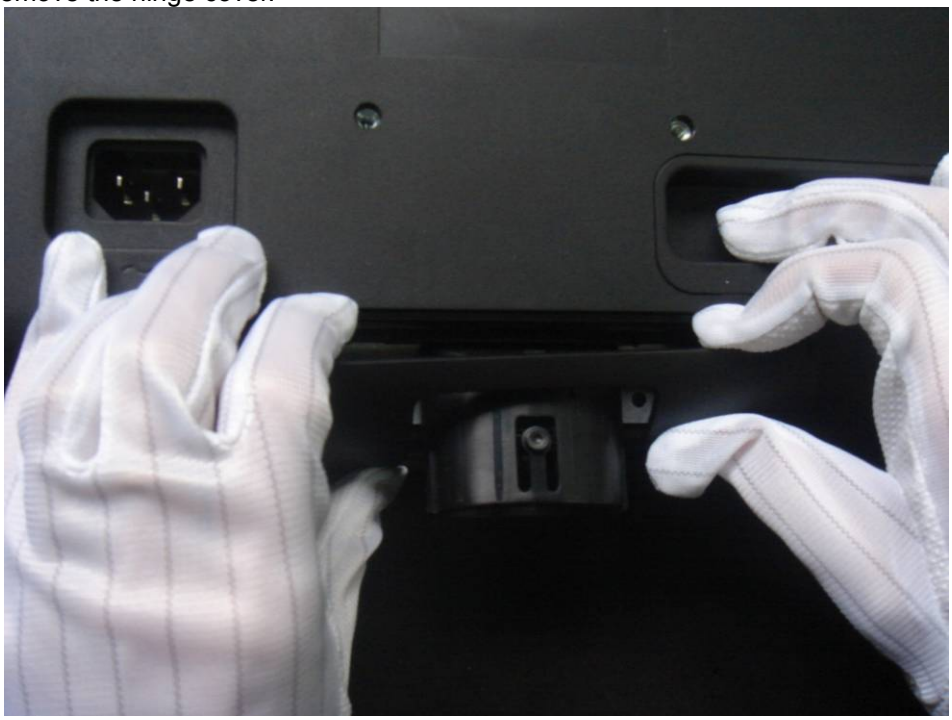
2. Lay down the monitor and the bottom side faces to Yourself.

3. Pinch the hook and remove the base.

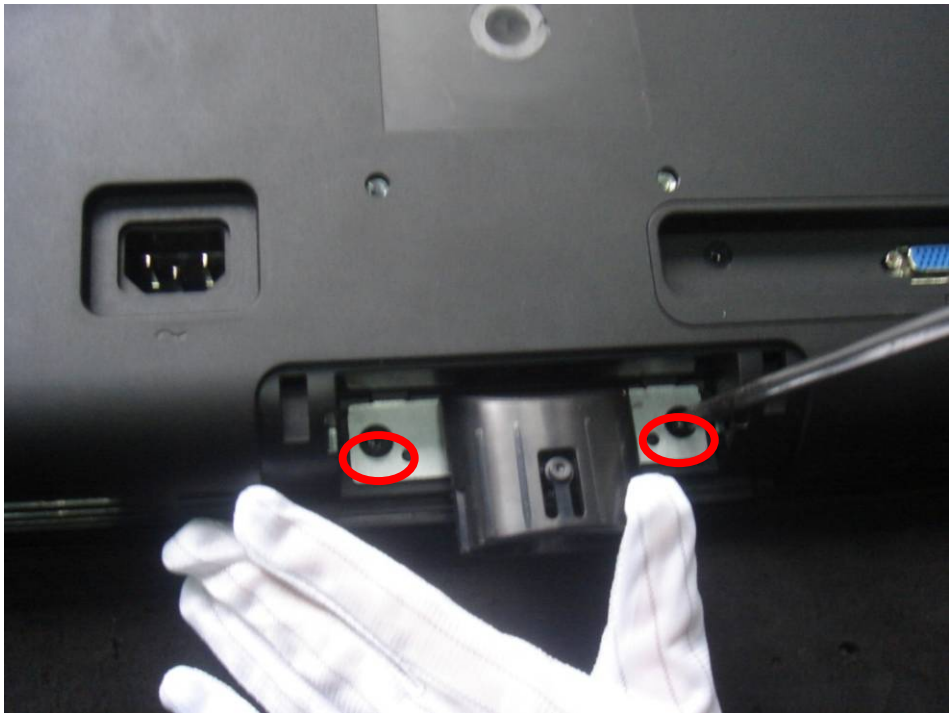


4. Use fixture to leave off the stand.

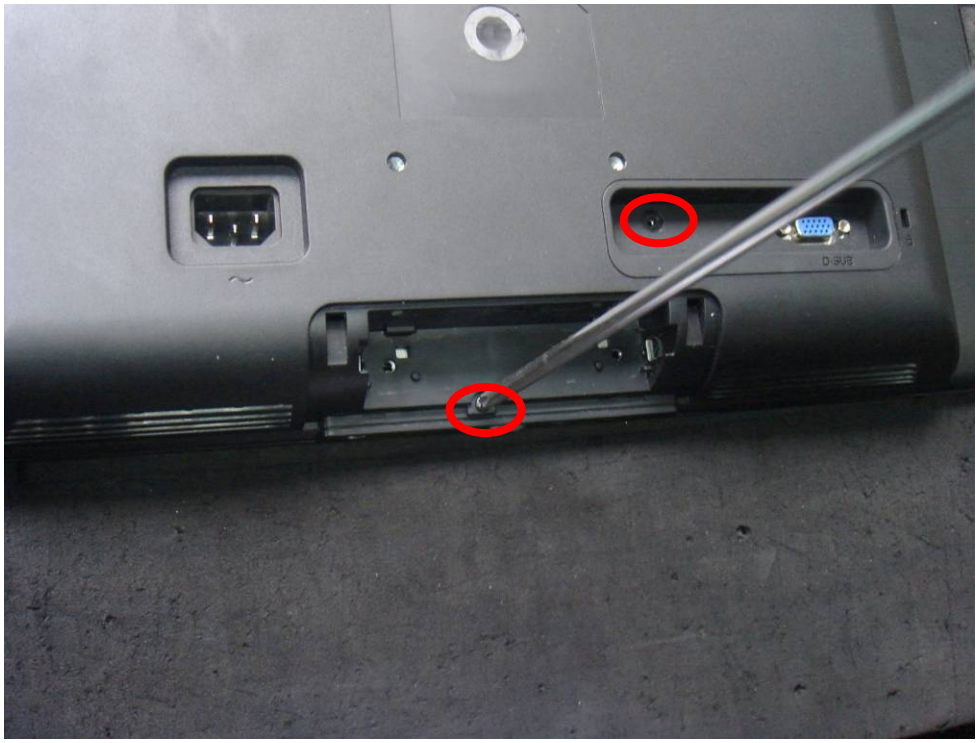
5. Use fixture to remove the hinge cover.



6. Remove the screws of the stand.

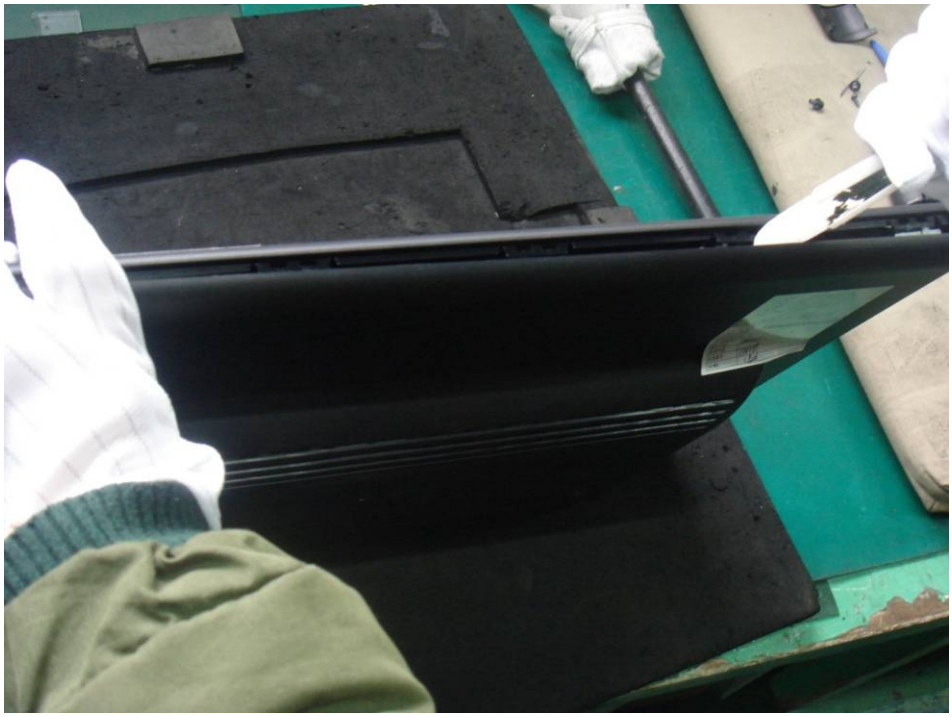


7. Remove the screws of the back cover.



8. Overturn the monitor and the top towards to yourself, and then take apart the front frame with hands.

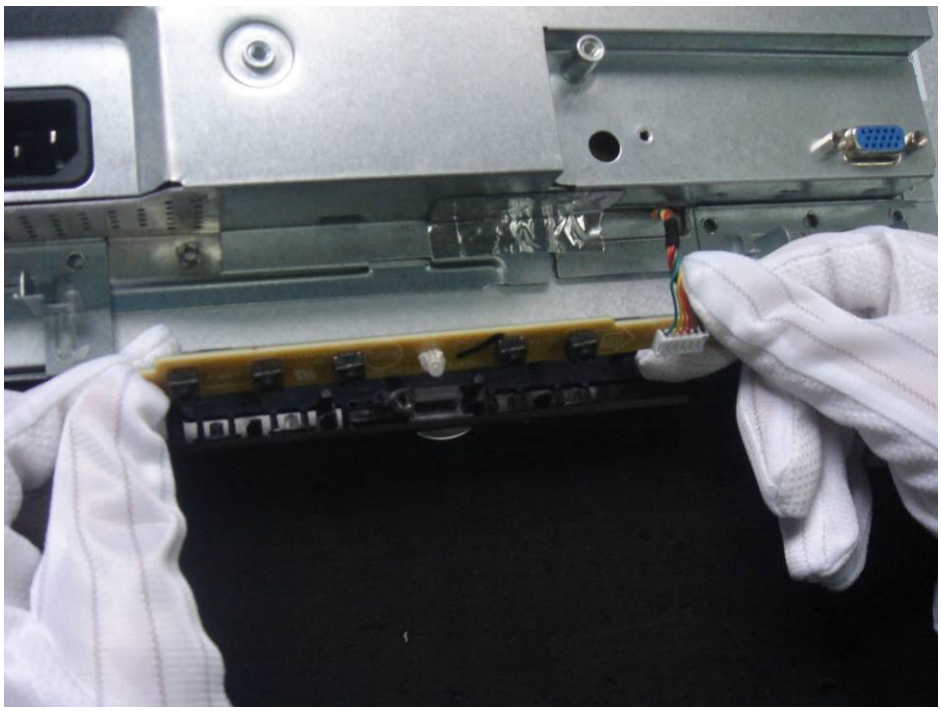
9. Prize up the front frame use fixture.



10. Overturn the monitor and take off the back cover.

11. According to the different defective area to take off the KEPC, light line, LVDS, Hexagon screws, CBPC or PWPC to repair.

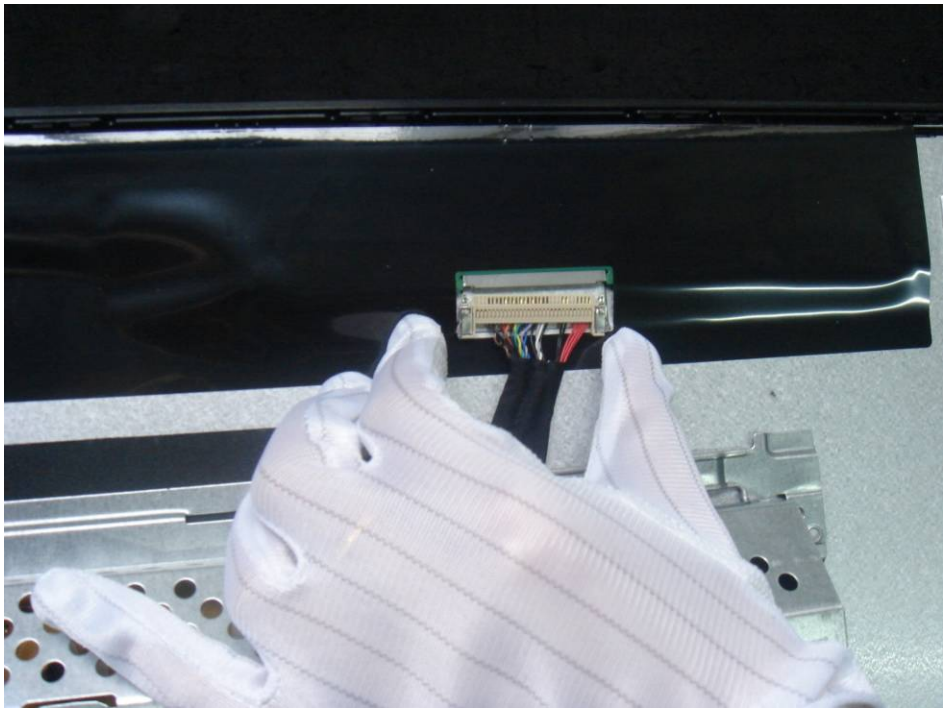
（1）Remove the KEPC.



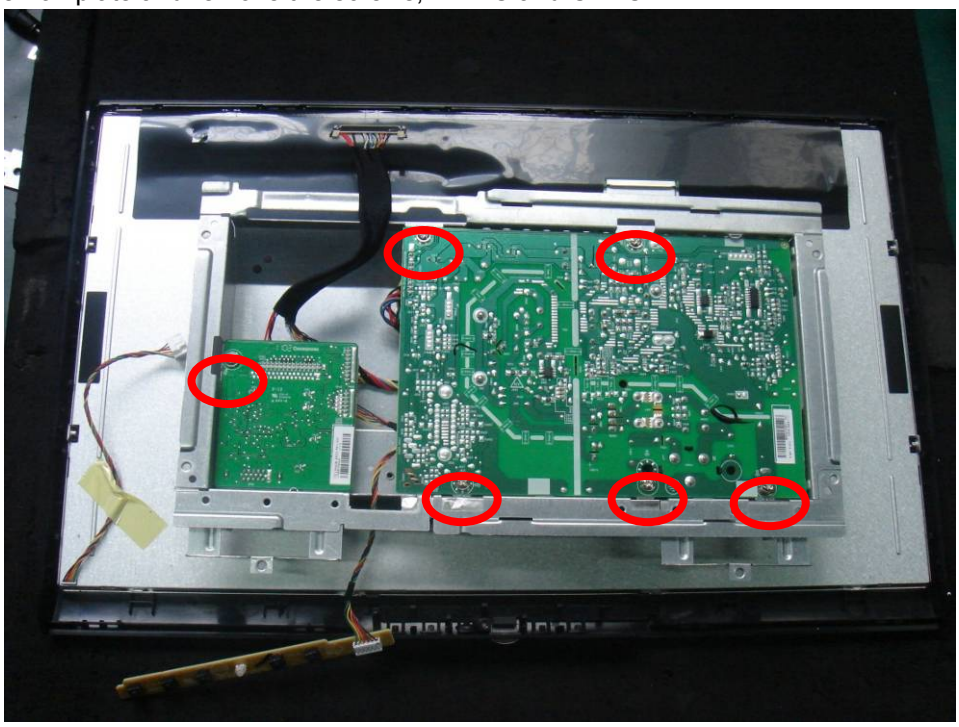
（2）Pull the light line out.

（3）Remove the Hexagon screws.

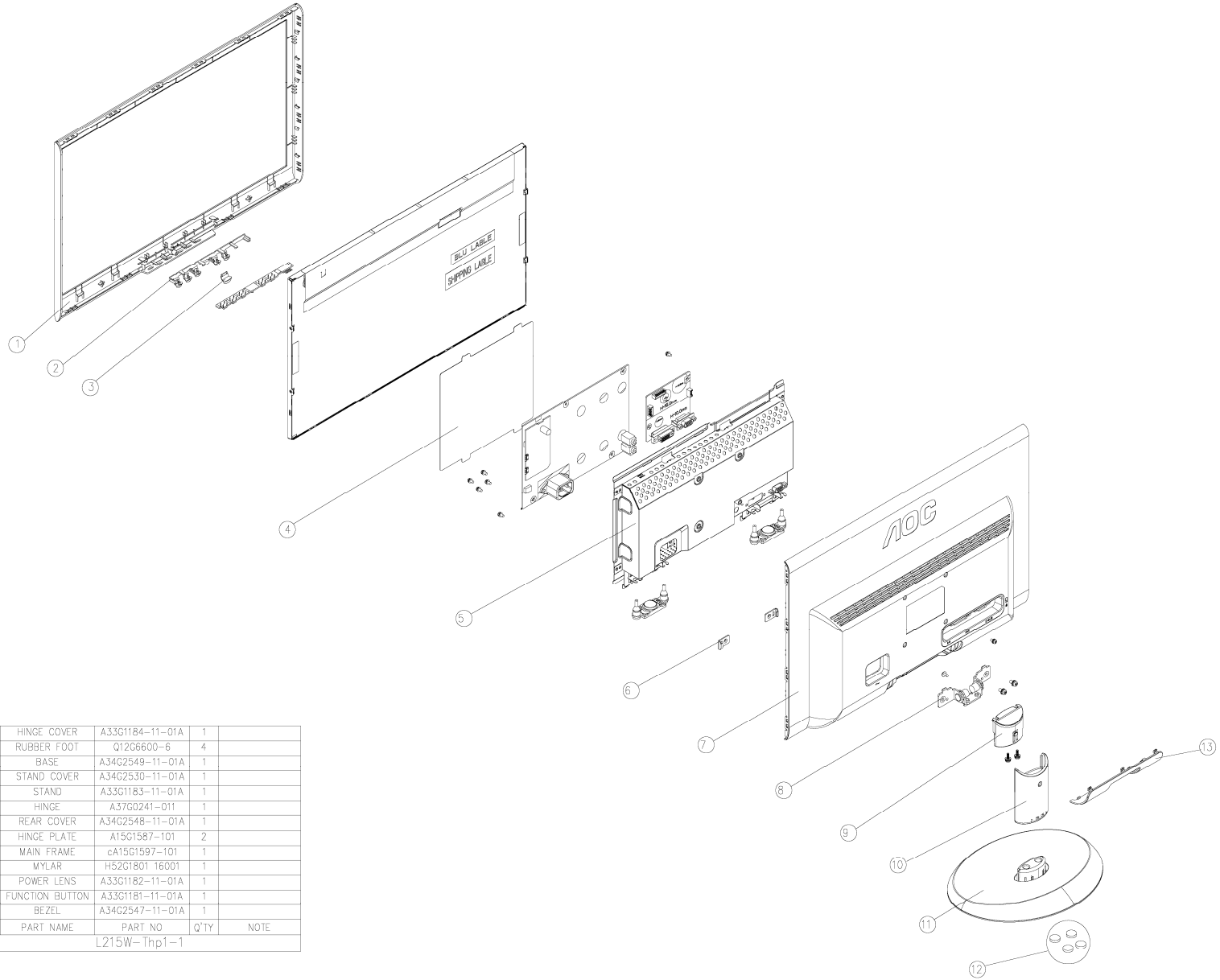
（4）Remove the LVDS.



（5）Overturn the iron plate and remove the screws, PWPC and CBPC.



12. Monitor Exploded Views



NO	PART NAME	PART NO	Q'TY	NOTE
13	HINGE COVER	A33G1184-11-01A	1	
12	RUBBER FOOT	Q12C6600-6	4	
11	BASE	A34G2549-11-01A	1	
10	STAND COVER	A34G2530-11-01A	1	
9	STAND	A33G1183-11-01A	1	
8	HINGE	A37G0241-011	1	
7	REAR COVER	A34G2548-11-01A	1	
6	HINGE PLATE	A15G1587-101	2	
5	MAIN FRAME	cA15G1597-101	1	
4	MYLAR	H52G1801 16001	1	
3	POWER LENS	A33G1182-11-01A	1	
2	FUNCTION BUTTON	A33G1181-11-01A	1	
1	BEZEL	A34G2547-11-01A	1	

L215W-Thp1-1

14. BOM List

Note: The parts information listed below are for reference only, and are subject to change without notice. Please go to http://cs.tpv.com.cn/hello1.asp for the latest information.

TIBARV2QAGA42NE

Location	Part No.	Description	Remark
	040G 58162435A	P/N LABEL FOR MANUAL PE BAG	
	705GHABCA78	Brazil ASS'Y	
	705GHABCP78	Brazil ASS'Y	
	KEPCAHB5K	KEY BOARD	
	040G 45762420A	LABEL 25x6mm	
	040G 58162435A	LABEL	
	040G 581689 4A	BARCODE LABEL FOR 1	
	045G 77500	INK CARTRIDGE 300000 x130	
	045G 77501	BARCODE RIBBON	
	052G 1185	MIDDLE TAPE (Y1200141)	
	052G 2191 A	PAPER TAPE	
E08902	089G 725CAA DB CKD	D-SUB CABLE	2nd source
E08902	089G 725HAA DB CKD	D-SUB CABLE	
E08901	089G424A15N IS	AC POWER CORD 1500MM	
E08907	095G179J30NE34	FFC CABLE 30pin 190mm 1.0mm	
E09504	095G8014 6DE45	HARNESS 6P(CI1406)-6P(2008) 140	2nd source
E09504	095G8014 6TE45	HARNESS 6P(CI1406)--6P(2008) 140	
E09504	095G8014 6WE45	HARNESS 6P(CI1406S)-6P(2008) 140	2nd source
	0D1G1030 8120	screw	
	0M1G 930 8 47 CR3	SCREW 3x8	
	0M1G1140 8120	SCREW 4x8	
	0Q1G 140 12120	SCREW 4X12	
	0Q1G 930 10120	SCREW (T3X10)	
E750	750GBU215H1B2HN000	LCD M215HW01 VBTB WH AUO	2nd source
	A15G1587101	HINGE PLATE	
	A15G1597101802 CKD	MAIN FRAME FOR 50TH 21.5W	
	A33G1181ABJ 1L0100	FUNCTION BUTTON FOR 50TH	
	A33G1182 1 1L0100	POWER LENS FOR 50TH	
	A33G1183ABJ 1L0100	STAND TOP FOR 50TH 18.5W	
	A33G1184ABJ 1L0100	HINGE COVER FOR 50TH 18.5W	
	A34G2530ABJ 1B0100	STAND COVER	
	A34G2547AEDC2B0100	BEZEL FOR 50TH 21.5W	
	A34G2548ABJ AB0100	REAR COVER	
	A34G2549AED 1B0100	BASE CKD	
	A37G0241014	HINGE 21.5	
	AM1G1740 10125	SCREW	
	H40G 58361513A	win7 EPEAT EPA LABEL	
	H40G22NP61578A	e2250Sw MAX ID LABEL	
	H41G780061554A	BRAZIL WARRANTY CARD	
	H45G 77 6	PE PACKING	
	H45G 87 1 26	EPE COVER	
	H45G 87 28 V2	PE BAG FOR MANUAL	
	H52G1801 16006	insulating sheet	
	H70G201161520A	e2250Sw CD MANUAL	
	PLPCBB581AHD1	POWER BOARD	
	Q12G6600 6	FOOT	
	Q52G6019 14	TAPE	
	Q52G6025 13155	MYLAR	
E08907	S95G179T30NE34	FFC CABLE 30P 190mm P1.0MM	2nd source

CN408	033G3802 6B Y L	WAFER	
CN404	033G3802 9B Y L	CONN 2.0 9P	
CN403	033G801930F CH JS	FFC CONN 1.0mm 30P R/A 34mm 6.3mm	
CN101	088G 35315FVCL	D-SUB CONN V/T 15P BLUE H=10.4	
X401	093G 2253B J	NXS14.31818AC32F-KAB10	
	709G4737 HM001	COMSUPTIVE ASS'Y	
	H40G 45762429A	LABEL	
	KEPCAHB5K	KEY BOARD	
LED001	081G 12 1F GP	LED Φ3mm 黄绿双色 GP32032M/G307-ZY-50-C	
CN001	095G820H 6TE10	HARNESS 6P(SANW)-6P(2008) 120	
	709G4747 HM002	COMSUPTIVE ASS'Y	
	756GHBCB A1020	MAIN BOARD-CBPCBRVA1H1K	
U402	056G2233 11	IC Pm25LD020C-SCE SIOC-8(150mil) 2M	
U402	056G2233501	FLASH MX25L2026DM1I-12G 2Mb SOP-8	2nd source
SMTCB-U402	100GARAI000Z11	MCU ASS'Y-CBPCBRVA1H1K	
GND1	009G6005 1	GROUND TERMINAL	
U902	056G 139 3A	PC123Y22FZOF SHARP	
NR901	061G 5810T	RST NTCR 8 OHM +-20% 4A 13mm THINKING	
C908	063G107K474 6S	0.47UF +-10%	
C903	065G305M1023BW	CAP Y2 1NF 20% 250V Y5U	
C902	065G305M1023BW	CAP Y2 1NF 20% 250V Y5U	
C900	065G306M2222BP	CAP Y1 2.2NF 20% 250V Y5P	
C907A	067G 40Z47015K	EC 47UF 20% 450V 12.5*35	
C907	067G 40Z47015K	EC 47UF 20% 450V 12.5*35	
C809	067G 415330 9K	EC 33UF 20% 100V ED 8*12	
C801	067G215D3314KV	EC 330UF 20% 25V 10*12 4000 hr	
C918	067G215D6814KV	EC 680UF 20% 25V 10*20	
C922	067G215S4713KV	EC 470UF 20% 16V 10X13	
L901	073G 174 65 H2	LINE FILTER 30mH MIN	
L906	073G 253191 H	IND CHOKE 1.1uH DADON	
L801	073G 253214 DN	CHOKE COIL 47UH 10% LZ.CC013.G01	
T901	080GL22T 3 N3	X'FMR 490UH 7% 4UH YUVA-1656	
CN901	087G 501 48 S	AC SOCKET 3PIN + 3 Hole	
D902	093G 60335	DIODE SR515 5A/150V DO-201AD	
D901	093G 60335	DIODE SR515 5A/150V DO-201AD	
CN902	095G 825 9T518	HARNESS 9P-9P 120MM	
CN902	095G 825 9W518	HARNESS 9P-9P 120MM	2nd source
	0Q1G 340 8140	SCREW 4.0x8.0	
CN804	311GW200A06ABX	WAFER 2.0mm 6P	
	705GHA57006	Q901 ASS"Y	
	705GHA93006	D906 ASS"Y	
	709G4744 HM001	CONSUMPTIVE ASS'Y	
	H40G 45762429A	LABEL	
BD901	093G 50460515	BRIDGE KBP308G-C 3A 800V KBP	
	Q55G 100625	TIN STICK_LOW ARGENTUM	
C421	067G305M1013PB	EC 100uF M 16V 6.3*7mm	
C423	067G305M1013PB	EC 100uF M 16V 6.3*7mm	
C426	067G305M1013PB	EC 100uF M 16V 6.3*7mm	
C427	067G305M1013PB	EC 100uF M 16V 6.3*7mm	
	709G4737 HA001	COMSUPTIVE ASS'Y	
R002	061G0603000 FF	RST CHIPR MAX0R01 1/10W FENGHUA	
R004	061G06031001FF	RST CHIPR 1 KOHM +-1% 1/10W FENGHUA	
R001	061G06032001FF	RST CHIP 2KOHM 1% 1/10W FENGHUA	
R003	061G06032001FF	RST CHIP 2KOHM 1% 1/10W FENGHUA	
Q901	057G 667941	MOSFET P0765ATF 7 650 TO-220F	

HS1	090G6064 1	HEAT SINK	
	0M1G 930 8120	SCREW 3x8	
HS3	090G6084 1 GP	HEAT SINK	
D906	093G 60507	SCHOTTKY SRF1060 C0 10A 60V ITO-220AB	
	0M1G 930 8120	SCREW 3x8	
	055G 23524	WELDING FLUX WITHOUT PB	
	Q51G 6 4509	GLUE_RTV	
	Q55G 100625	TIN STICK_LOW ARGENTUM	
U901	056G 379529	AC/DC CONVERTER IC LD7576AGR SOP-7	
U801	056G 700 11	LED DRIVER OZ9998BGN-A1-0-TR SOP-16	
Q801	057G 763 92	FET P8008HV 4A/80V SOP-8	
RJ801	061G0805000 JF	RST CHIPR 0 OHM +-5% 1/8W FENGHUA	
R811	061G0805000 JF	RST CHIPR 0 OHM +-5% 1/8W FENGHUA	
R804	061G0805100 JF	RST CHIPR 10 OHM +-5% 1/8W FENGHUA	
R916	061G08051002FT	RST CHIP 10K 1/8W 1%	
R806	061G0805102 JF	RST CHIPR 1K OHM +-5% 1/8W FENGHUA	
R907	061G0805102 JT	RST CHIPR 1K OHM +- 5% 1/8W TZAI YUAN	
R801	061G0805103 JF	RST CHIPR 10K OHM +-5% 1/8W FENGHUA	
R818	061G0805103 JF	RST CHIPR 10K OHM +-5% 1/8W FENGHUA	
R928	061G0805103 JF	RST CHIPR 10K OHM +-5% 1/8W FENGHUA	
R918	061G0805103 JT	RST 0805 10K 5% 1/8W	
R805	061G0805104 JT	RST CHIPR 100KOHM +- 5% 1/8W TZAI YUAN	
R808	061G0805109 JF	RST CHIPR 1 OHM +- 5% 1/8W FENGHUA	
R807	061G0805109 JF	RST CHIPR 1 OHM +- 5% 1/8W FENGHUA	
R815	061G0805164 JF	RST 0805 160K 5% 1/8W	
R810	061G08052002FT	RST CHIP 20K 1/8W 1%	
R920	061G0805202 JF	RST CHIPR 2KOHM +-5% 1/8W FENGHUA	
R919	061G0805221 JF	RST CHIPR 220 OHM +-5% 1/8W FENGHUA	
R803	061G0805304 JF	RST CHIPR 300KOHM +-5% 1/8W FENGHUA	
R802	061G0805304 JF	RST CHIPR 300KOHM +-5% 1/8W FENGHUA	
R809	061G08053303FT	RST CHIP 330K 1% 1/8W	
R905	061G0805471 JT	RST CHIPR 470OHM +-5% 1/8W TZAI YUAN	
R816	061G08055101FT	RST CHIP 5K1 1/8W 1%	
R925	061G08059101FF	RST CHIPR 9.1KOHM +-1% 1/8W FENGHUA	
F801	061G1206000 JT	RST CHIPR MAX0R05 1/4W TZAI YUAN	
R917	061G1206100 JT	RST CHIPR 10 OHM +-5% 1/4W TZAI YUAN	
R814	061G12061009FF	RST CHIP 10 OHM 1% 1/4W FENGHUA	
R910	061G1206101 JT	RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R903	061G1206101 JT	RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R909	061G1206101 JT	RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R930	061G1206101 JT	RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R929	061G1206101 JT	RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R912	061G1206101 JT	RST CHIPR 100 OHM +-5% 1/4W TZAI YUAN	
R911	061G1206103 JF	RST CHIPR 10KOHM +-5% 1/4W FENGHUA	
R908	061G1206103 JT	RST CHIPR 10KOHM +-5% 1/4W TZAI YUAN	
R913	061G1206109 JT	RST CHIPR 1 OHM +-5% 1/4W TZAI YUAN	
R813	061G12062007FT	RST CHIPR 0.2 OHM +-1% 1/4W	
R812	061G12062007FT	RST CHIPR 0.2 OHM +-1% 1/4W	
R923	061G1206221 JT	RST CHIPR 220 OHM +-5% 1/4W TZAI YUAN	
R902	061G1206624 JF	RST CHIPR 620KOHM +-5% 1/4W FENGHUA	
R901	061G1206624 JF	RST CHIPR 620KOHM +-5% 1/4W FENGHUA	
R900	061G1206624 JF	RST CHIPR 620KOHM +-5% 1/4W FENGHUA	
R817	061G1206681 JT	RST CHIPR 680 OHM +-5% 1/4W TZAI YUAN	
C813	065G080510131J F	CAP CHIP 0805 100PF J 50V NPO	
C812	065G080510131J F	CAP CHIP 0805 100PF J 50V NPO	

C923	065G080510232K F	CAP 0805 1000PF 10% 50V X7R	
C914	065G080510232K Y	CAP CHIP 0805 1N 50V X7R +/-10%	
C803	065G080510232K Y	CAP CHIP 0805 1N 50V X7R +/-10%	
C815	065G080510232K Y	CAP CHIP 0805 1N 50V X7R +/-10%	
C906	065G080510232K Y	CAP CHIP 0805 1N 50V X7R +/-10%	
C915	065G080510332K Y	CAP CHIP 0805 10N 50V X7R +/-10%	
C802	065G080510332K Y	CAP CHIP 0805 10N 50V X7R +/-10%	
C814	065G080510432K F	CAP CHIP 0805 0.1UF K 50V X7R	
C924	065G080510432K F	CAP CHIP 0805 0.1UF K 50V X7R	
C912	065G080510432K Y	CAP CHIP 0805 100N 50V X7R +/-10%	
C926	065G080510432K Y	CAP CHIP 0805 100N 50V X7R +/-10%	
C806	065G080522432K Y	CAP CHIP 0805 220N 50V X7R +/-10%	
C807	065G080522432K Y	CAP CHIP 0805 220N 50V X7R +/-10%	
C927	065G080547332K F	CAP CHIP 0805 47NF K 50V X7R	
C811	065G080547432K T	CAP CHIP 0805 0.47UF K 50V X7R	
C810	065G080547432K T	CAP CHIP 0805 0.47UF K 50V X7R	
C804	065G080547432K T	CAP CHIP 0805 0.47UF K 50V X7R	
C808	065G120610171J Y	CAP 1206 100PF 5% 500V NP0	
C929	065G120622272K Y	CER 1206 2N2 500V X7R 10%	
C928	065G120622272K Y	CER 1206 2N2 500V X7R 10%	
C917	065G120622272K Y	CER 1206 2N2 500V X7R 10%	
C916	065G120622272K Y	CER 1206 2N2 500V X7R 10%	
D801	093G 60S907 T	SCHOTTKY B3100B 3A 100V SMB	
	709G4744 HS001	CONSUMPTIVE ASS'Y	
U401	056G 562432	SCALER RTD2280LW-CG LQFP-64	
U406	056G 563149	IC G903T63UF 0.6A/3.3V SOT-223	
U103	056G 662 48	ESD PROTECT AZC399-04S.R7G SOT23-6L	
U102	056G 662 48	ESD PROTECT AZC399-04S.R7G SOT23-6L	
U405	056G1133531	EEPROM FM24C02A-SO-T-G 2K SOP-8	
U402	056G2233 11	IC Pm25LD020C-SCE SIOC-8(150mil) 2M	
Q404	057G 417517	Tra LMBT3906LT1G -200mA/-40V SOT-23 LRC	
Q402	057G 417517	Tra LMBT3906LT1G -200mA/-40V SOT-23 LRC	
Q403	057G 417517	Tra LMBT3906LT1G -200mA/-40V SOT-23 LRC	
Q406	057G 417518	TRA LMBT3904LT1G 200mA/40V SOT-23 LRC	
Q407	057G 417518	TRA LMBT3904LT1G 200mA/40V SOT-23 LRC	
Q410	057G 417527	SMALLTRAN MMBT2907A -0.6 -60V SOT-23	
Q409	057G 417527	SMALLTRAN MMBT2907A -0.6 -60V SOT-23	
Q405	057G 763940	MOSFET AO3401A SOT-23	
R481	061G0402000 JT	RST CHIPR MAX0R05 1/16W TZAI YUAN	
R402	061G0402000 JT	RST CHIPR MAX0R05 1/16W TZAI YUAN	
R401	061G0402000 JT	RST CHIPR MAX0R05 1/16W TZAI YUAN	
R412	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R413	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R420	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R411	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R405	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R117	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R115	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R114	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R111	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R108	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R104	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R103	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R102	061G0402101 JT	RST CHIP 100R 1/16W 5% TZAI YUAN	
R109	061G0402102 JT	RST CHIP 1K 1/16W 5% TZAI YUAN	

R442	061G0402102 JT	RST CHIP 1K 1/16W 5% TZAI YUAN	
R435	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R437	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R439	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R440	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R441	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R487	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R433	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R414	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R410	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R408	061G0402103 JT	RST CHIP 10K 1/16W 5% TZAI YUAN	
R118	061G0402104 JT	RST CHIP 100K 1/16W 5% TZAI YUAN	
R436	061G0402104 JT	RST CHIP 100K 1/16W 5% TZAI YUAN	
R492	061G0402220 JT	RST CHIP 22R 1/16W 5% TZAI YUAN	
R491	061G0402220 JT	RST CHIP 22R 1/16W 5% TZAI YUAN	
R490	061G0402220 JT	RST CHIP 22R 1/16W 5% TZAI YUAN	
R489	061G0402220 JT	RST CHIP 22R 1/16W 5% TZAI YUAN	
R105	061G0402222 JT	RST CHIP 2K2 1/16W 5% TZAI YUAN	
R106	061G0402222 JT	RST CHIP 2K2 1/16W 5% TZAI YUAN	
R466	061G0402222 JT	RST CHIP 2K2 1/16W 5% TZAI YUAN	
R469	061G0402222 JT	RST CHIP 2K2 1/16W 5% TZAI YUAN	
R474	061G0402223 JT	RST CHIP 22K 1/16W 5% TZAI YUAN	
R403	061G04023900FT	RST CHIP 390R 1/16W 1%	
R421	061G0402392 JT	RST CHIP R 3K9 +/-5% 1/16W TZAI YUAN	
R427	061G0402392 JT	RST CHIP R 3K9 +/-5% 1/16W TZAI YUAN	
R428	061G0402392 JT	RST CHIP R 3K9 +/-5% 1/16W TZAI YUAN	
R475	061G0402470 JT	RST CHIP 47R 1/16W 5% TZAI YUAN	
R476	061G0402470 JT	RST CHIP 47R 1/16W 5% TZAI YUAN	
R485	061G0402472 JT	RST CHIP 4K7 1/16W 5% TZAI YUAN	
R473	061G0402472 JT	RST CHIP 4K7 1/16W 5% TZAI YUAN	
R472	061G0402472 JT	RST CHIP 4K7 1/16W 5% TZAI YUAN	
R107	061G0402750 JT	RST 0402 75R 5% 1/16W	
R112	061G0402750 JT	RST 0402 75R 5% 1/16W	
R116	061G0402750 JT	RST 0402 75R 5% 1/16W	
R101	061G0603000 JT	RST CHIP MAX 0R05 1/10W TZAI YUAN	
R468	061G0603331 JT	RST 0603 330R 5% 1/10W	
R471	061G0603471 JT	RST CHIPR 470OHM +-5% 1/10W TZAI YUAN	
R479	061G1206000 JF	RST CHIPR MAX0R05 1/4W FENGHUA	
R434	061G1206301 JT	RST CHIPR 300 OHM +-5% 1/4W TZAI YUAN	
R477	061G1206301 JT	RST CHIPR 300 OHM +-5% 1/4W TZAI YUAN	
C436	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C432	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C428	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C422	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C420	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C419	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C417	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C416	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C415	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C414	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C413	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C407	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C406	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C403	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	
C401	065G040210412K A	CAP CHIP 0402 100nF K 16V X7R	

C404	065G0402105A5K A	CAP CHIP 0402 1UF K 10V X5R	
C412	065G040220031J Y	CAP 0402 20PF 5% 50V NP0	
C411	065G040220031J Y	CAP 0402 20PF 5% 50V NP0	
C102	065G040222031J A	CAP 0402 22PF J 50V NPO	
C103	065G040222031J A	CAP 0402 22PF J 50V NPO	
C106	065G040222322K T	CAP MLCC 0402 22nF K 25V X7R	
C408	065G040222415K T	CAP CHIP 0402 220nF K 16V X5R	
C434	065G040222415K T	CAP CHIP 0402 220nF K 16V X5R	
C113	065G040247312K A	CAP 0402 47NF 10% 16V X7R	
C110	065G040247312K A	CAP 0402 47NF 10% 16V X7R	
C109	065G040247312K A	CAP 0402 47NF 10% 16V X7R	
C107	065G040247312K A	CAP 0402 47NF 10% 16V X7R	
C105	065G040247312K A	CAP 0402 47NF 10% 16V X7R	
C101	065G040247312K A	CAP 0402 47NF 10% 16V X7R	
C104	065G040250931C Y	CAP 0402 5PF 0.25pF 50V NP0	
C108	065G040250931C Y	CAP 0402 5PF 0.25pF 50V NP0	
C111	065G040250931C Y	CAP 0402 5PF 0.25pF 50V NP0	
FB402	071G 56K121 M	CHIP BEAD 120OHM 6A MGLB2012-120T-LF	
FB401	071G 59B300 M	CHIP BEAD 0603 30ohm 25% 1000mA	
FB102	071G 59K190 M	CHIP BEAD 0603 19R/500mA	
FB103	071G 59K190 M	CHIP BEAD 0603 19R/500mA	
FB101	071G 59K190 M	CHIP BEAD 0603 19R/500mA	
D403	093G 64 42 L	DIODE LBAV70LT1G SOT-23 LRC	
ZD103	093G 39GA01 T	RLZ5.6B	
	709G4737 HS001	COMSUPTIVE ASS'Y	
E715	715G4737M01BRA004C	MAIN PCB FR4 DS 72*65*1.6mm	
E715	715G4737M01BRA004S	MAIN PCB FR4 DS 72*65*1.6mm	2nd source
SW005	077G603S AI CJ	TACT SWITCH AI 2PIN SEALED	
SW004	077G603S AI CJ	TACT SWITCH AI 2PIN SEALED	
SW003	077G603S AI CJ	TACT SWITCH AI 2PIN SEALED	
SW002	077G603S AI CJ	TACT SWITCH AI 2PIN SEALED	
SW001	077G603S AI CJ	TACT SWITCH AI 2PIN SEALED	
E715	715G4747K01000001C	KEY PCB FR1 SS 135*11*1.6mm	
C805	065G250K1052HT	CAP CER 1UF 10% 25V X7R	
C816	065G517K102 2T6921	CAP CER 1000PF K 500V Y5P	
C911	065G 2K152 2T6921	CAP CER 1500pF K 2KV Y5P	
C913	067G215Y4707KT	EC 47uF 20% 50V 6.3*11mm	
D903	093G 6026T52T	CTIFIER DIODE FR107	
F901	084G 56 4 B	FUSE 4A 250V	
F902	084G 56 4 B	FUSE 4A 250V	
FB801	071G 55 29	FERRITE BEAD	
FB802	071G 55 29	FERRITE BEAD	
FB901	071G 55 29	FERRITE BEAD	
FB902	071G 55 29	FERRITE BEAD	
FB903	071G 55 29	FERRITE BEAD	
R924	061G152M47852T SY	RST MOFR 0.47 OHM +-5% 2WS FUTABA	
Q904	057G 530503 T	2SD1207T	
J801	095G 90 23	JUMPER WIRE	
J802	095G 90 23	JUMPER WIRE	
J803	095G 90 23	JUMPER WIRE	
J804	095G 90 23	JUMPER WIRE	
J805	095G 90 23	JUMPER WIRE	
J806	095G 90 23	JUMPER WIRE	
J807	095G 90 23	JUMPER WIRE	
J808	095G 90 23	JUMPER WIRE	

J809	095G 90 23	JUMPER WIRE	
J810	095G 90 23	JUMPER WIRE	
J811	095G 90 23	JUMPER WIRE	
J812	095G 90 23	JUMPER WIRE	
J813	095G 90 23	JUMPER WIRE	
J814	095G 90 23	JUMPER WIRE	
J815	095G 90 23	JUMPER WIRE	
J901	095G 90 23	JUMPER WIRE	
J902	095G 90 23	JUMPER WIRE	
J903	095G 90 23	JUMPER WIRE	
J904	095G 90 23	JUMPER WIRE	
J905	095G 90 23	JUMPER WIRE	
J906	095G 90 23	JUMPER WIRE	
J907	095G 90 23	JUMPER WIRE	
J909	095G 90 23	JUMPER WIRE	
J910	095G 90 23	JUMPER WIRE	
J921	095G 90 23	JUMPER WIRE	
CN901	006G 31500	EYELET	
IC903	056G 158 10 T	LDO IC AZ431AZ-AE1 TO-92 150MA 40V TO-92	
R915	061G 17222052T TZ	RST CFR 22R 5% 1/4W	
R906	061G152M10452T SY	RST MOFR 100KOHM +-5% 2WS FUTABA	
R904	061G152M25152T SY	RST MOF 250R 5% 2W	
C920	067G 2046812KT	CS CAP 680uF 10V 8*11 mm	
ZD901	093G 39A6852T	ZENER DIODES MTZJ22B DO-34	
D907	093G 6452452T	SWITCHING 1N4148-B4006 0.2A 100V DO-35	
J908	095G 90 23	JUMPER WIRE	
	709G4744 HA001	CONSUMPTIVE ASS'Y	
	715G4744P01000001C	PWR PCB FR1 SS 195*132*1.6MM	
D904	093G 6026T52T	CTIFIER DIODE FR107	